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Matching Grants

Will faculty whose projects initiate federal matching funds see any of the money? Sometimes, but not always.

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One ingredient of success is previous failure, Noble laureate John Polanyi reminded taxpayers recently.

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Consultant's survey to begin in New Year

Opinions sought on unicameral system

A survey of opinions within the University about its system of government will be conducted in the new year, Governing Council chairman St. Clair Balfour announced at the Council meeting Dec. 4.

Balfour said that since the long-term plans of the University are currently under review, the Executive Committee decided "to see if we could get some real facts about the performance of this

council and the system within which it works."

As examples of concern within the University community about governance, he pointed to a critical article in the *Bulletin* by Professor W.H. Nelson and a letter in the faculty association newsletter from Professor Emeritus J.B. Conacher.

The person hired to conduct the survey will be from outside the Univer-

sity but familiar with it. Balfour said he expects to have the terms of reference for the consultant ready to show to members of Council this week. Representatives of all U of T constituencies such as the faculty association, the staff association, Governing Council and student government bodies would be interviewed.

Balfour said he hoped the survey would be completed by March. He said the consultant would not be empowered to make recommendations on governance, only to report opinions. As for what the next step will be when the survey is completed, "We will report back to this council through its Executive Committee when we have something to report."

President George Connell's report to Governing Council Dec. 4 outlined the general implications for the University of the Nov. 3 announcement of 1987-88 provincial grants.

The University will receive \$287.2 million in formula funding next year, compared with \$276.2 million this year, an increase of \$11 million or four percent, the president told Council.

"On the basis of earlier information we had anticipated a four percent increase for the system, but we might have expected the University of Toronto's share to be somewhat lower. We now expect our share to be at the same level as the system," Connell said.

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Provost ready with plan for school of architecture

by George Cook

In a report to the Academic Affairs Committee Provost Joan Foley recommends the establishment of a School of Architectural Science & Design to replace the Faculty of Architecture & Landscape Architecture.

The school would be an academic division of the University, funded from its base budget. A director and council would develop curricula and programs for the architectural disciplines, subject to the regular approvals of Governing Council. In addition, a provostial advisory board would be established to help monitor and assess the progress of implementation of the plans for the school.

A draft of the report was submitted for preliminary discussion *in camera* to the Nov. 24 meeting of the Planning Subcommittee of the Planning & Resources Committee. The final version and the recommendations will be considered by the Academic Affairs Committee on Dec. 11.

In the report the provost recommends that the search for a director be initiated immediately and that a recommendation for appointment be made to academic affairs prior to July 1, 1987 if possible. The search committee would be made up of six members of the provostial advisory board, one faculty member and one student from each of the current programs in architecture and landscape architecture and a chair nominated by President George Connell.

The new school would be established and the current faculty disestablished upon the appointment of the director. The school would assume responsibility for the programs leading to the bachelor of architecture and bachelor of landscape architecture degrees. Students and alumni of the current faculty would become students and alumni of the school.

Foley said the name "School of Architectural Science & Design" may receive further consideration. A name that is acceptable to everyone has not yet been found, she said.

The director's first priority would be the development of a new staffing plan for both programs, the report says. The plan would be devised in cooperation

with the heads of other academic units and the provost's office.

All members of the administrative staff and the librarian of the existing architecture faculty would become staff of the school. "The University will honour its contractual commitments to current academic staff in the Faculty of Architecture & Landscape Architecture," the report says.

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\$1 million research fund for Polanyi

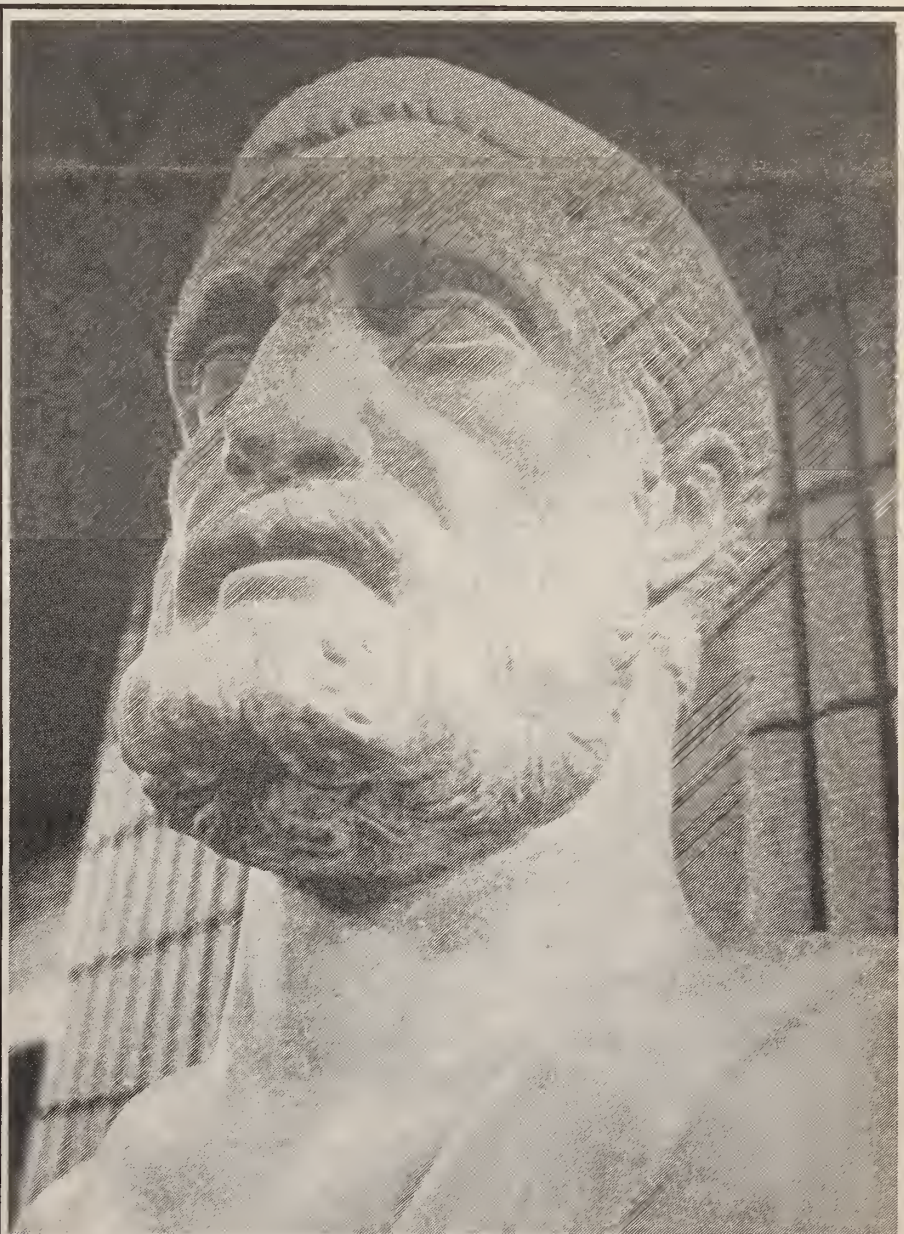
A special research fund of \$1 million for Professor John Polanyi was approved by Governing Council at its Dec. 4 meeting. The money will be provided over five years in annual payments of \$200,000.

In presenting the proposal for the establishment of the fund, Joan Randall, vice-chairman of Council, said the award will come from the earnings of the Connaught Fund. The Connaught Committee had enthusiastically endorsed the award, she said.

Randall observed that those members of the University community who had heard Polanyi's address to the joint meeting of the Empire Club and the Canadian Club were "extremely proud to hear him speak with such brilliance."

Polanyi will receive his Nobel Prize in Stockholm on Dec. 10. President George Connell and his wife, Sheila, will be attending the awards ceremony and the royal banquet following the presentations. "I understand the King of Sweden is always on hand for the banquet," Connell told Council. "It should be a great celebration."

Connell said the two scholars with whom Polanyi is sharing the prize for chemistry — Yuan T. Lee of the University of California at Berkeley and Dudley Herschbach of Harvard University — have asked Polanyi to speak on their behalf at the banquet.



Unveiling of Hippocrates

A group of Greek-Canadian physicians, led by Dr. Dimitrios Oreopoulos of the Toronto Western Hospital has donated a bust of Hippocrates to the Faculty of Medicine. The bust, dedicated to the students of the faculty, is inscribed with both the original classical Greek and the English versions of the Hippocratic

oath. Dr. Oreopoulos presented the bust to President George Connell in a ceremony at the Medical Sciences Building Nov. 26 attended by the Greek ambassador to Canada, Emmanuel Megalokonomos, the consul general of Greece in Toronto, John Thomoglou, and faculty members and students.

Council

Continued from Page 1

In addition, the University will likely receive between \$15 and \$20 million in special allocations from the province, compared with the \$11.4 million in Excellence Fund monies received this year. However, the distribution of the special allocations is still under consideration by the Ontario Council on University Affairs and no firm figures are available yet, Connell said.

"This is of course a very substantial improvement relative to the expectations we had after the treasurer's announcement in the fall of 1985, which assured us only the basic four percent for the 1987-88 year. So the renewal of parts of the Excellence Fund and the provision of additional funds are ex-

Governing Council briefs

PhD in criminology

At its meeting Dec. 4, Governing Council approved a proposal by the School of Graduate Studies for a PhD program in the Centre of Criminology. In recommending the program on behalf of the Academic Affairs Committee, Professor William Callahan explained that only two other Canadian universities, Simon Fraser University and the University of Montreal, offer PhD programs in criminology.

Purchase of Gage Research Institute

Council approved the purchase of 223 College Street, the Gage Research Institute, from the National Sanitarium Association for \$1 million to be paid in five annual instalments of \$200,000. The building will provide the University with additional medical research labs and animal-care facilities. Gordon Romans, an alumni representative on council, asked whether the fact that the building is off campus would cause problems in maintaining the security of the animal-care facilities. Provost Joan Foley said that, on the contrary, the animal-care facilities in the Gage building present fewer security problems than do some in campus buildings.

United Way

Noting that U of T's United Way campaign had achieved far more than its goal (see story page 5), President Connell extended his "warmest thanks to all those in the University who helped to make this campaign such an outstanding success." He said Rivi Frankle, director of the Career Centre, and Tom Robinson, dean of graduate studies, had chaired the campaign with "tremendous imagination and enthusiasm".

Policy on chairs

Governing Council has approved a new policy regarding the establishment of designated and/or endowed chairs, professorships, lectureships, public lectures and programs. The new guidelines are more specific than those in the previous policy, which was passed in 1979.

Anne-Marie Kinsley, a full-time undergraduate student representative on Council, opposed the new policy on the ground that chairs, etc., should not be named after people who have contributed financially but not intellectually to the University. Gerald Schwartz, a government appointee to Council, said, however, that it was fitting that an endowed position or program within the University be named after a person who might have wanted to pursue academic research in a certain discipline but had not had the opportunity to do so.

tremely important and will make a significant difference to the University," Connell said. "There no doubt that the minister's announcement was extremely good news for this University, in fact for all universities of Ontario.

"I believe Nov. 3 was a significant turning point for the universities of Ontario. I hope it indicates an attitude and intention on the part of the government that will be fulfilled in subsequent years. However, despite the four percent increase in formula funding and the increased special allocations, the development of the University's base budget will be difficult, the president said. "We don't know the precise amounts or the constraints that will be applied to the spending of the additional funds. There's no doubt those constraints will make it difficult to assemble our operating budget."

"It will be both technically difficult," Connell said, "and difficult in substance, because I expect that there will continue to be some erosion of the core expenditure budget of the University, even though the additional funds could be applied, in part, in ways that will compensate for the erosion to the base."

Under the provincial program, two parts of the Excellence Fund — the faculty renewal, equipment and library funds — will continue with much the same terms of reference as this year. However, the research leadership fund will be replaced by a series of other programs to promote program adjustment and recognize enrolment growth. Tuition will be allowed to rise four percent.

OISE

The president also reported that a lack of agreement on financial matters has meant that the recently concluded round of talks between the University and the Ontario Institute for Studies in Education resulted in no final agreement on the integration of OISE and U of T's Faculty of Education.

The president said he will submit a report on the talks to Gregory Sorbara, the minister of colleges and universities, before the end of the year.

Connell said he believes the University should continue to pursue a new arrangement with OISE while recognizing that no common ground has yet been found.

Talks began in 1983 for the renewal of the affiliation agreement between U of T and the institute. At that time a joint committee under the chairmanship of Professor Lorna Marsden was established to consider the possibility of integrating OISE and the Faculty of Education.

The Marsden report strongly favoured integration and outlined a procedure to bring it about. Connell said the Marsden recommendations have guided the University's policy since its publication.

In 1985 U of T and the institute agreed to negotiate integration, but a subsequent announcement by Ontario treasurer Robert Nixon to the effect that the government intended to bring about integration resulted in an abrupt end to the talks.

Since the Nixon announcement the OISE board of governors has been reluctant to comply with government policy, Connell said. "In that respect the institute has received overt support from both opposition parties in the legislature," the president added.

"The arrangement between the University and OISE has constrained the ability of the Faculty to recognize its full potential in the field," the president said. "The institute is, in effect, the graduate department of education of the University and the Faculty of Education as such has only a very limited role to play in graduate education. My administrative colleagues and I perceive that to be a very serious constraint, as do most members of the Faculty."

Confidentiality issue unresolved

The University of Toronto Staff Association has instructed its two representatives on the Performance Management Working Group to try to work out an arrangement concerning confidentiality of discussions in the group that would be agreeable to UTSA as well as administration representatives. UTSA informed the chair of the group, Jackie Baker, that it is unwilling to accept a proposed change in the terms of reference that would ensure confidentiality of material until it had been formally recommended.

The group met Nov. 27, but the terms of reference were not on the agenda.

Ed Janzen, manager of compensation for human resources, said he expects that the matter will be discussed at the next meeting of the working group. "I'm hoping that we can work out some wording that's acceptable to both of us and will keep UTSA involved in policy issues and allow for free discussion of these issues so that people don't draw back from speaking freely before an issue is resolved."

New College library emphasizes women's studies

An anonymous gift of \$50,000 will boost the women's studies program at New College by adding to the holdings on women's studies in the Donald Glenn Ivey Library.

In response to budget cuts, the library, funded by the college, has been focusing its spending on women's studies acquisitions. Of its total holdings of 14,000 volumes, 3,000 are in this field. The college aims to build a strong collection for use by graduate as well as undergraduate students in women's studies.

Enrolment in the New College women's studies program last year was close to 1,900. The program was founded in 1971. Two introductory courses are team-taught, one on philosophy, history and fine art and one on biology, anthropology and psychology. In addition, there are courses on feminist theory, feminism and history, women and the law and women and health.

"We function on spit, string, glue and a prayer," said New College librarian Jean Guillaume, "so this donation is really quite a windfall. And the fact that it came from someone who took a personal interest is also significant." The donor has asked to be involved in decisions about how the money is spent.

In line with the donor's wishes, the acquisitions will be of printed material only. Entire reprint series of previously out-of-print books by women will be purchased. As well as books and periodicals, bound theses will be added to the collection. "There are theses about

Canadian women," said Guillaume, "but there hasn't been much book publishing on this." A special effort will be made to acquire material by and about French, Acadian and Québécoise women.

As well as scholarly material, the library has clippings, briefs, pamphlets and a specialized bibliography on women. Demand for its material increased dramatically when a sign went up on the door and letters went out announcing that women's studies was a special strength being developed at the library. "We're beginning to see more and more students from courses that aren't part of women's studies but have a special women's component," said Guillaume.

Mary Nyquist, coordinator of the program, feels it is important to recover writings that have been forgotten or were not read in the first place and to collect analytical and historical studies of women's experience for the light these materials shed on past experience and attitudes. She cited as an example the work of Sylvia Van Kirk, a historian who teaches in the women's studies program. Van Kirk's book on the involvement of women in the Canadian fur trade showed how native women who lived with European fur traders imparted their business knowledge to them.

"Almost every discipline has been quite radically transformed by the feminists working in it in the last 10 years," said Nyquist. "Assumptions are being challenged, new questions asked, and new materials looked at."

Part-time library workers sign two-year contract

Part-time library workers, members of the Canadian Union of Public Employees, Local 1230, have ratified a new two-year collective agreement with the University. They voted 46-24 on Dec. 4 to accept a contract that reclassifies them as assistant library technicians with no limit on the number of sessions they can work.

The new contract defines assistant technicians as University of Toronto students. Personnel librarian Kay Marie Mackenzie said the non-students now employed as part-time sessionals will continue to be part of the complement, but any new employees will be students.

The contract contains no provisions to transfer non-student employees to other jobs. About 12 of the 213 part-time employees are non-students.

On Nov. 19 the part-time workers voted to reject a contract that fixed a three-year period in which non-students would be transferred to other jobs and

limited the number of sessions a student could work to six. Full-time workers voted on the same day to ratify their contract.

After the second year of the new agreement an assistant library technician will make between \$7.35 and \$8.61 an hour, depending on experience.

Bookroom Xmas hours

The offices of the University of Toronto Press will be open on Monday, Tuesday and Wednesday (morning only), Dec. 29, 30 and 31. The Bookroom will be open 8.45 a.m. to 6 p.m. Dec. 24, and 10 a.m. to 5 p.m. Dec. 29 to 31 and Jan. 2 and 3.

Matching funds will aid economic renewal, says Oberle

by Patrick Donohue

The federal government's new matching funds policy is a key element in the economic renewal of Canada, said Frank Oberle, minister of state for science and technology, in a press conference held at U of T Nov. 25 to announce the final details of the program.

According to the plan, promised by Finance Minister Michael Wilson in February's budget, the federal government will match private sector investment in university research up to a maximum of six percent of the previous year's budget of each of the federal granting councils — the Natural Sciences & Engineering Research Council, the Medical Research Council

and the Social Sciences & Humanities Research Council. The matching money will be channelled through the council in whose jurisdiction the research falls.

Among other regulations, Oberle announced that:

- private sector contributions made after April 1, 1986 will be eligible for federal matching funds when the program begins in 1987
- eligible private sector contributions will include "contributions in kind" for research that is supported by a council and can be value-assessed by the council
- the sources of contributions eligible for matching funds will include individuals, businesses, private non-profit and charitable organizations, private found-

ations and trusts and certain crown corporations — based in or outside of Canada

- private sector contributions in excess of the annual ceiling for federal matching funds in one year may be carried forward to the next year for federal matching

Through the program, councils will be eligible to receive a total of \$369.2 million from the federal government by 1990-91 to match an equal contribution to university research from the private sector.

But Oberle said he felt that it was possible that the government's contributions would increase next year if the private sector provides more than is expected.

This year, Oberle said, the private sector contributed about \$40 million to university research. By 1990-91, private sector contributions would have to rise to \$155.7 million to bring in the maximum federal matching grants.

President George Connell called that amount "an ambitious target" that "will require extremely effective efforts on all our parts."

While Vice-President (Research) David Nowlan welcomed the program, he warned that it "is not, and was not

intended to be, a solution to the financial difficulties facing universities; nor is it a substitute for the core financing required by the federal granting councils."

As for whether the program would succeed, Nowlan said: "I am not sure any of us can be confident at this point ... I am reserving judgement."

Oberle said the private sector in Canada has not done its share in supporting university research. In some countries, he said, as much as half of university research is funded by the private sector.

But he said Canada's private sector now recognizes that university research must be stepped up to rectify our high tech trade deficit, which stands at \$12 billion for the current fiscal year and is increasing at a rate of 15 percent annually. "That's an incredible indictment on our ability to respond to opportunities and challenges that are out there." He said the matching funds program should facilitate the transfer of technology developed in universities to industry.

The incentives for industry to participate in the matching funds program are obvious, Oberle said. Because contribu-

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Federal funding program bad for research: Polanyi

by George Cook

The federal government's matching-grants program for funding university research is a mistake, Nobel laureate John Polanyi told reporters during a brief news conference after a speech he delivered Nov. 27 to the Empire and Canadian Clubs at the Royal York Hotel.

"It was a proposal that suddenly appeared on the scene and the country was rather stampeded into it," Polanyi said. "I think the direction is not the right one. The scheme as it has been detailed makes the best of what is a poor proposal."

Linking grants from the Natural Sciences & Engineering Research Council to funding from industry is "getting incommensurate things together," he said.

"Industry may go through some bad years. Does that mean we don't need to have science in Canada — don't need to invest in a decade hence any more? It doesn't mean anything of the sort."

"I would go even further and draw an analogy. There are other things the industrial sector is very interested in, like the defence of the country — to the extent that there is such a thing — and the Department of External Affairs. To link their budgets to industrial activities would be a mistake, since we don't want to dismantle our armed forces or our Department of External Affairs during every slump."

Polanyi said the universities are under pressure to disguise themselves as training centres for technicians, "people with a skill that can be instantly applied in the marketplace."

"If the universities succumb to these temptations at this time of great financial stringency — and there's a great temptation to compromise and dissimulate — they will undermine their value."

Basic scientific research is a long-term project that requires long-term support, he said. "The insistence on relating fundamental science — university-type science — to the needs of the marketplace has passed beyond the point of usefulness and has become shortsighted. If you keep insisting that you

want (technological) benefits, the danger is that you support short-term research and do nothing for long-term science, the really exciting science."

"I was talking to the minister of science (Frank Oberle) and I made the same point. If you go to your broker and tell him you want to get rich quickly, you won't get very rich. If you tell him you're interested in long-term growth, you may get richer. But if you tell him some confused mess of the two things, then you'll probably lose all your money. At the moment we in Canada are very confused. We forget that basic science is aimed at the longer term and can be compromised and undermined by forcing it to be short-term."

"It's enormously hard to discover anything worth knowing. Science — fundamental science — is a high-risk undertaking and most often it fails. When it succeeds — when it succeeds in a major way — it transforms the world, as we know. If you're in this sort of venture you have to be allowed to be opportunistic as a scientist. You have to say, 'Look, there's something I could discover, and if I knew it, people would start to view that area of physics or chemistry — maybe a large area — in a different way. And it would have wide ramifications in science and therefore ultimately in technology.'

"But if somebody comes up to you and says, 'Yes, but did you actually make some progress toward the sort of technology you said might flow from you work?' you admit that you didn't, because usually you didn't. So the sponsor of the research simply takes the money and gives it to somebody else, and makes the same impossible requirements."

The quality of individual research projects in Canada is as high as that in the United States, Polanyi said, but Canada lags significantly behind the US in funding for fundamental science. "This is evident to every young scientist contemplating a career in this country," he said. "As a result many leave at an early stage and inevitably the most ambitious and the best, because they're the ones who are courted by the United States, and courted very handsomely."

In his address to the Empire and Canadian Clubs, Polanyi pointed out that it took a full decade following his initial discovery of infrared emissions from newly-formed hydrogen chloride molecules to translate his finding "into something dependable and informative." Had funding for his project been tied to short-term economic priorities, his work would not have come to fruition.

Incentives for matching grants a concern of Research Board

The Research Board recommended at its Dec. 3 meeting that money paid to the University by the federal government under the matching funds scheme go in most cases to the researchers who generated the private-sector support responsible for the match and, if that is not feasible, to their departments.

Professor Mike Collins of civil engineering said in his presentation of the recommendation that researchers need incentives to encourage them to seek private-sector support for their projects. The policy is meant, however, to allow

for some flexibility in the distribution of the money.

Vice-President (Research) David Nowlan said that in future years, when the matching grants program will presumably bring in greater amounts of money to the University, the board could consider broader guidelines for distributing the money in order to support the work of young researchers.

But all board members expressed strong doubts about the government's estimates of private support, now and in

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Next Bulletin

The next issue of the *Bulletin* will be published Jan. 12.

The deadline for receipt of events and booking of display ads is Dec. 22.

Editorial material and classified ads should be in the *Bulletin* offices at 45 Willcocks St. by Dec. 23.

Season's greetings



from the staff of the Bulletin

Oberle

Continued from Page 3

tions to university research will be eligible for tax credits, he said, companies will be able to receive "two dollars' worth of world-class research for 50 cents."

The matching funds policy doesn't mean less money will be available for basic research, Oberle said. For instance, some money would be used to endow chairs that could be devoted to basic research.

Oberle said that, although the granting councils reflect the government's funding priorities, the councils will continue to operate at arm's length from

Incentives

Continued from Page 3

future years. Nowlan challenged the claim by Frank Oberle, minister of state for science and technology, that the private sector is currently contributing \$40 million to university research. Since private sector support for U of T research that would be eligible for matching funds currently stands at \$1.6 million, Nowlan estimated the total for all Canadian universities would not likely be more than \$20 million for this year.

Professor Mike Charles, vice-dean of the Faculty of Applied Science & Engineering, said NSERC's plan to direct just 10 percent of matching funds to universities next year gives the impression that industry is considered to be funding university research at an adequate level now. He said that if NSERC adheres to its plan to return such a small amount, special efforts would have to be made to convince the private sector that more support is required.

Nowlan said he believed there might still be some slight chance that NSERC would change its stated policy of returning 10 percent of matching funds next year, 20 percent in 1987-88 and 30 percent in 1989-90.

Although the Medical Research Council has not yet announced its policy with regard to the return of matching money to universities, the board considered the widely held view that the council is not planning to return any matching money to the projects that initiated the federal grants program next year. Nowlan acknowledged that such a policy could be justified since most of the increases in funding for medical research in universities that would be eligible for matching grants next year are expected to come from foundations and that such funding does not incur the same obligations on the part of universities that industry-sponsored research does.

But Professor William Tatton, associate dean of the Faculty of Medicine, said a policy of returning no matching money to universities would be shortsighted on the part of MRC. Citing the money currently invested by drug companies in research in teaching hospitals, he said that if there is no return on matching money, there is no incentive for the researchers to report the private sector investment which would bring the council matching federal grants.

Professor Donald Moggridge, associate dean of the School of Graduate Studies, said that the Social Sciences & Humanities Research Council has stated that it will definitely give to universities 100 percent of matching money received for Canada Research Fellowships. The fellowships will account for about half of SSHRC's maximum of \$4 million in federal matching money next year, Moggridge said. He said SSHRC has not yet made a final decision on the rest of its matching money but will likely return 20 percent.

the government. The government will not tell the councils what projects to support with the matching funds, he said.

Oberle said the councils themselves had requested the authority to decide how much of the matching money to return to specific universities or projects and how much to spend on other council-supported programs. As an example of how one council intends to implement the policy, President Connell pointed out that next year NSERC will return 10 percent of matching money to the university or research project which prompted the matching federal funds.

The regulations call for a peer review of privately funded research for which council support is also sought. Oberle said such reviews will ensure that the research isn't duplicated elsewhere.

In cases of privately funded research not requiring council funding, the councils will have to certify to the government that the research is eligible for matching funds but the projects will not be subject to peer review.

Faculty, staff urged to show support of U of T

Vice-President (Institutional Relations) David Cameron has written to principals, deans, directors and chairs suggesting that they encourage their colleagues to direct their contributions to the faculty/staff appeal to the divisions in which they work.

"As the University moves into a major fundraising appeal to the private sector, it is more important than ever that we be able to point to financial support from those of us within the University," Cameron says. "No more convincing argument can be made when soliciting the assistance of others than the demonstrated commitment to the institution of those who know it best."

Several deans and principals have reiterated that theme in personal appeals. "To make an effective appeal for support outside the University, it is essential to be able to point to our own efforts to aid ourselves," says Principal Peter Richardson in a letter to UC academic and administrative staff members. "Nothing carries more weight than contributions, by staff and students, to projects that are close to our hearts."

He invites UC personnel to contribute directly to specific college projects. Examples mentioned by Richardson include the Barker Fairley Distinguished



BOOKS BY UNIVERSITY OF TORONTO STAFF

December

Newspaper Writings (Collected Works of John Stuart Mill, Volumes 22 to 25), edited by Ann P. Robson and John M. Robson (University of Toronto Press; approx. 1,600 pages; \$175) This four-volume set covers the period from 1822 to 1873 when Mill praised his friends and damned his foes in a wide range of English newspapers, commenting on issues from Ireland to banking, from wife-beating to land nationalization.

November

Sounding the Iceberg: An Essay on Canadian Historical Novels, by Dennis Duffy (ECW Press; 84 pages; \$25 cloth, \$15 paper). For a century and a half, Canadian novelists have used the history of this country as material for their works. Based upon wide reading, this essay deals with historical fiction in

both official languages and charts the evolution of the genre.

Exceptions and Rules: Brecht, Planchon and "The Good Person of Szechwan", by Pia Kleber (Peter Lang Verlag; 334 pages). This book examines the Brechtian influence on Planchon's three stagings of Brecht's *The Good Person of Szechwan*. A comparison of these stagings with the Berliner Ensemble production of the same play not only reveals the clash between the German and French theatrical traditions but the German *mise en scène* also provides a point of reference which underlines the similarities and differences between Planchon's and Brecht's staging methods.

The Imagination of Edward Thomas, by Michael Kirkham (Cambridge University Press; 220 pages; \$39.50 US). Edward Thomas, the centenary of whose birth was celebrated in 1978, is now regarded as a major English poet. This volume is principally a study of his poetry, though a chapter on his imaginative prose is included.

Catching up

October

The Communist Manifesto, by Karl Marx and Frederick Engels, edited and introduced by Jack Wayne (Canadian Scholars' Press; 49 pages; \$6.50). This republication of the 1888 English translation, edited for use by Canadian university students, contains a new introduction and new footnotes that amplify the background and purpose of the *Manifesto*.

Council by-election results

The results of the full-time undergraduate students by-election, announced by Susan Girard, chief returning officer, Governing Council elections, are:

Robert Chang (architecture and landscape architecture)	287
Soraya Farha (law)	251
Peter Lin (law)	159

Ballots mailed (9,864)

Received (713)

Invalid (11)

Spoiled (5)

Robert Chang's term begins immediately and will continue until June 30, 1987.

Soil erosion in China to be studied

The International Development Research Centre has awarded \$490,000 for a study of erosion in Guangdong province, China, to be directed by Shiu-hung Luk, associate professor of geography at Erindale College.

Luk, who is also the coordinator of the China environment study group in the Institute for Environmental Studies, says the three-year study will concentrate on erosion in the province's granitic areas, which cover some 100,000 sq. km., or more than half the total area of Guangdong.

Although the area is humid, receiving over 1,500 ml. of rain annually, much of the vegetation was removed long ago by foresting, Luk explains. The remaining scrub has been exploited for fuel as the population has expanded. That means the rains can easily erode the soil, which consists of rock that has disintegrated into particles of sand or clay.

Luk's study will assess the extent and severity of the erosion. Researchers will

monitor soil changes in specific circumstances — during a storm, for instance. The study will also try to determine the most effective erosion control measures. Luk points out that appropriate controls would have to be compatible with local culture as well as financially viable.

Co-investigators are geography professors J.B.R. Whitney, U of T, M.K. Woo, McMaster University, and K.C. Lam, Chinese University of Hong Kong. D.S. Munro, associate professor of geography at Erindale, will serve as special consultant to the project. The research team will also include two graduate students and a research officer.

Some 20 Chinese scientists will assist with the study. Three Chinese technicians, sponsored by IDRC, are currently receiving training at U of T to prepare them for the project.

Luk expects to make his first visit to the China site after Christmas. He says the field work will start in April.

Bulletin

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OCUA consults universities on allocation scheme

Ontario's universities have been given a chance to respond to a recommendation by the Ontario Council on University Affairs for the distribution of funds before its transmittal to the Ministry of Colleges & Universities on Dec. 15. There have been two meetings of university and OCUA representatives, one in late November with technical staff and one on Dec. 1 between university heads and the OCUA committee on formula revision.

"It is quite usual for council to have either meetings or hearings or to request submissions [from the universities] on any piece of work we do," said council chairman Marnie Paikin. "The difference is that we put a proposal before them for reaction."

"Normally, we do not see OCUA's advisory memoranda before they go to the minister," said Dan Lang, assistant vice-president (planning) at U of T. "We applaud this move — we think it's a very good thing."

Paikin said the last time a formula revision was recommended the minister of education and colleges and universities, Bette Stephenson, at the suggestion of OCUA, circulated it for discussion. After two meetings with university representatives, Stephenson decided to reject the advice. She substituted a formula devised at the ministry and began phasing it in in 1984-85 in a

one-third old formula/two-thirds new formula split. The phasing in was frozen on the advice of OCUA pending recommendations of the Bovey Commission.

Last fall Gregory Sorbara, minister of colleges and universities, rejected the Bovey Commission's proposals for allocation and asked OCUA to make recommendations to him on a new formula. He also asked, when the funding announcement for 1987-88 was made, that OCUA advise him on distribution of the \$50 million the province has made available for research and accessibility.

Neither OCUA nor the ministry has yet indicated how much latitude the universities will have in spending the money targetted for accessibility and research. The more tightly the strings are tied with respect to targetting, the less the relief in U of T's budget for next year. Adoption of the new formula would make a difference to U of T of a few tenths of a percentage point, said Lang. The increase in operating grants would be about four percent under the new formula as compared with 3.6 percent under the current one.

OCUA will not inform the universities of the contents of its memorandum to the minister, said Paikin. An announcement by the ministry as to the rules for distribution of the funds it will provide for next year is expected by the end of January.

University to submit proposal for centres of excellence

U of T is preparing its bid for one or more of the centres of excellence to be funded by the province at a total of \$10 million annually for the next 10 years.

The centres will be established in Ontario universities according to the recommendation of Premier David Peterson's new council on science and technology. The council, formed this summer to advise the premier on competitive economic policies for the province, includes among its 27 members Professor Geraldine Kenney-Wallace, chair of U of T's Research Board.

Although definite guidelines on proposals for the centres aren't expected from the premier's council until mid-December, Vice-President (Research) David Nowlan has already asked deans and principals to suggest areas in their faculties and colleges which might form centres of excellence.

The administration is reviewing the 21 suggestions received to determine which ones will comprise U of T's proposal to the government.

No decision has been taken on the ideas put forward but Nowlan says he has been advising certain faculty members on how their promising suggestions can be strengthened.

The proposals most likely to be funded will be those which are based on existing high-quality research and are seen to have strategic importance to the provincial economy, Nowlan believes.

He says the government appears likely to stress the importance of strong links between the centres and industry. For that reason, he says, some otherwise excellent proposals for centres of medical research will probably not be approved.

Because the province is expected to fund a maximum of six centres, he has encouraged U of T faculty to explore possibilities of establishing joint centres with other universities rather than competing with them for funding. He has discussed such ventures with his counterparts at all Ontario's universities.

Nowlan expects U of T's proposals to be finalized in January.

TAs accept two-year contract

Teaching assistants, members of the Canadian Union of Educational Workers, Local 2, have voted to accept a new two-year collective agreement.

CUEW president Andy Mitchell said of a total of 171 votes cast, 159 were in favour of the new agreement. There are about 2,400 people in the bargaining unit. Mitchell said the low turn out was not unusual.

"Once you publicize a settlement, people assume that's the end of it," he said. The tentative agreement was reached Nov. 7 and the union ratification vote took place Nov. 25 and 26.

The contract, retroactive to Sept. 1,

1986, provides for a wage increase over two years of \$1.90 an hour for TAs in the SGS II (PhD) category, \$1.70 an hour for those in the SGS I (MA) category, and \$1.50 for those in the undergraduate category, bringing the hourly rate in 1987-88 to \$22.80, \$20.39 and \$19.83 respectively. The increases are equivalent to a 4.8 percent in the first year and 4.1 in the second.

Teaching assistants may work up to 280 hours per academic year. Under the new agreement those in the SGS II category will be able to earn up to \$6,384 in the second year of the contract.



Gordon Cressy, president of the United Way, President George Connell and Rivi Frankle, director of the Career Centre, thank volunteers at the United Way wrap-up party. Frankle and SGS dean Tom Robinson co-chaired this year's United Way campaign.

U of T staff raise \$398,000 for the United Way

The U of T United Way campaign ended with the announcement that the University had surpassed its goal of \$371,000 by \$27,000.

United Way president Gordon Cressy told campaign volunteers at a thank-you party Nov. 26 at the Koffler Centre that U of T's donation of \$398,000 exceeds the donations of all educational institutions in Toronto and represents an 18 percent increase over last year's contribution.

Awards and prizes were presented at the party by U of T and the United Way for outstanding campaigns. Among them were:

- The [U of T] President's Award (given for the first time this year, for more than 80 percent participation) to: the Purchasing Department, the Internal Audit Department, the Department of Communications, the Department of Art as Applied to Medicine, the Department of Alumni Affairs, the Faculty of Architecture & Landscape Architecture, the Career Centre, New College, Business Information Systems, the Department of Private Funding and the

Students' Administrative Council

- The Gold Award (from the United Way, for more than 80 percent participation for divisions with staff greater than 30): the Faculty of Architecture & Landscape Architecture, Business Information Systems and the Career Centre

- Prizes for coordinators who led outstanding campaigns: Marion Zimmer (Woodsworth College); Mark Zier (University College); Judy Whiklo (Information System Services); Ann Van Fossen (Simcoe Hall); Susan Krizancic (Business Affairs); and Josie La Rocca (library system)

- Prizes for 100 percent participation: Department of Purchasing (coordinator Tom Nippak); Department of Communications (coordinator Marion de Courcy-Ireland); Internal Audit Department (coordinator Tim Cheung); and Department of Art as Applied to Medicine (coordinator Frances Raoul)

The winner of the grand prize raffle for donors was Jane Festin of the Department of Chemistry. She receives a trip for two to Vancouver, donated by Marlin Travel.

U of T prepares for pay equity bill

Though pay equity legislation for the broader public sector has not yet been enacted, U of T is laying the groundwork for its implementation.

The working group on equal pay for work of equal value, established in response to salary and benefit negotiations with the University of Toronto Staff Association last spring, will be considering what sort of tool should be developed or bought to measure various jobs by.

"U of T's job evaluation plan distinguishes one kind of work from another but doesn't compare the two," said Ed Janzen, manager of compensation in the human resources department. "To find out how the work of a dental technician relates to that of an engineering technologist you need to be able to quantify. A certain number of points would have to be assigned for education required and various other points."

Janzen believes that discrepancies will be found between salaries of female-dominated and male-dominated occupa-

tions. The pay equity act, as drafted, would require an organization to attend to its lowest-paid classifications first. Since these are all probably female-dominated — that is, at least 60 percent female — they would have to be compared with occupations classified at a higher level. If the work was found to be of equal value, the pay would be raised in the lower classifications.

Payment to bring equity about under the act as it is drafted would have to begin two years after the date of proclamation. For U of T, the amount spent would have to equal no less than one percent of the total payroll until equity was achieved. In three years, salary and benefit expenditures for faculty and administrative staff will be in the neighbourhood of \$235 million, said Janzen. That would mean \$2.35 million a year would have to be added for equity.

Where will the University get the money for salary adjustments? "I'm hoping that the government will see its obligation to provide us with something in this area," said Janzen.

RESEARCH NEWS

For further information and application forms for any of the following agencies, please contact ORA at 978-2163.

Christmas Vacation Period
Members of the University community are reminded that administrative offices will be closed from Dec. 24 to Jan. 2 (inclusive).

Applications with deadlines falling between these dates should be submitted to ORA for review and signature during the two weeks preceding Christmas.

Canadian Electrical Association

The CEA invites the submission of research proposals on the following:

1. Investigation of the stability of plant communities on transmission line rights-of-way;
2. Contraction joint seals for hydraulic structures;
3. Performance of Riprap in northern climates;
4. Utility use of the variable pressure mode with two-shift operation for heat rate improvement of large electrical generation units.

Closing for receipt of these proposals is 4 p.m. Thursday, January 15, at the association.

Addiction Research Foundation

ARF offers a number of personnel awards for graduate scholarships, post-doctoral fellowships and clinical research fellowships in the area of alcohol and drug dependence. Awards are for one year and may be renewed.

More details and application forms may be obtained either from the foundation or ORA. The deadline for submission is January 30.

Canadian Fitness & Lifestyle Research Institute

Funds are available to support research that will contribute to the development and dissemination of knowledge concerning physical activity, physical fitness and lifestyle, and the use of this knowledge in the development of programs and services for Canadians.

Deadline for applications is January 15. Decisions will be announced by March 31.

Control Data PACER Fellowships

Control Data's program for advanced computing in engineering and research (PACER) supports research in applications for commercial vector and parallel computers. Up to \$500,000 will be offered in 1987 to stimulate research in methods and applications using vector and parallel computers to solve problems in the sciences, mathematics and engineering.

Deadline for receipt of proposals is February 2.

Hudson River Foundation Program

The foundation offers support to researchers interested in the Hudson River ecosystem. Applications will be considered in basic and applied research and educational programs in the natural and social sciences.

The competition is open to Canadian citizens.

Interested applicants are requested to contact ORA for more precise details. Deadlines are February 12 and September 10.

Imperial Oil Limited

Grants to a maximum of \$8,000 are available to faculty members for research in areas of interest to Imperial Oil. This university research grants program is designed primarily to give students the opportunity to take an active part in the investigator's research, therefore individual student participation should be identified in the application proposal.

Details of the program and the criteria for selection may be obtained from ORA. Deadline for submission of applications is January 15.

Kidney Foundation of Canada

The Para-Medical Council is offering funding for investigators in nursing, social work, dietetics and renal technology working in kidney or urinary tract diseases. Application may be made for innovative projects, personnel support (scholarships) and research grants.

Further information and application forms are available from ORA. Deadline for applications is January 31.

Thrasher Research Fund

The fund supports research related to paediatric health with an emphasis on infectious diseases, nutrition and health promotion. Currently,

the agency is interested in receiving proposals on: paediatric enteric and acute respiratory infections; projects related to vitamin A and iodine deficiency; measurement of nutritional status; lactation and early feeding problems particularly related to developing countries especially the Caribbean and Latin America. Projects with a broad application rather than those with a narrow geographical or cultural focus with regard to the area of health promotion are preferred.

Initial application is by submission of a brief prospectus after consultation with the agency. There are no deadlines for initial application. For further details and precise format for the prospectus, please contact ORA.

Upcoming Deadline Dates

Addiction Research Foundation — personnel awards: January 30.

Alberta Heritage Foundation — medical research fellowships tenable at Alberta universities; conferences held in Alberta: January 1.

American Council of Learned Societies — American citizens or permanent residents only — grants-in-aid: December 15.

Amyotrophic Lateral Sclerosis Society (US) — full applications: January 15.

Canadian Fitness & Lifestyle Research Institute — research grants: January 15.

Canadian Life Insurance Association — scholarships (nominations): December 15.

Canadian Northern Studies Trust Awards — studentships, contact Department of Botany: January 15.

Control Data — 1987 PACER fellowships: February 2.

Diabetes Canada — personnel awards: December 15.

Gerontology Research Council of Ontario — advanced student bursaries: January 15.

Hudson River Foundation — research grants: February 12.

Imperial Oil Limited — university research grants: January 15.

Kidney Foundation of Canada — para-medical competition: January 31.

Lalor Foundation — post-doctoral fellowships: January 15.

Leukemia Society of America — Pres. research development awards; short-term scientific research awards: January 1.

March of Dimes (US) — education program; medical services program: January 1.

Ontario Mental Health Foundation — research studentships: January 2.

Ontario Ministry of Health — fellowships; studentships: January 15.

Paralyzed Veterans of America — Spinal Cord Research — research grants: January 1.

Physicians' Services Inc. Foundation — research grants: January 9.

Scottish Rite Schizophrenia Research — operating grants (letter of intent): January 1.

Tsumura Juntends, Inc. — research grants: January 1.

U of T Research Board — Humanities & Social Sciences Committee — conference travel grants: December 15;

general research grants: January 15.

Damon Runyon-Walter Winchell Cancer Fund — fellowships: December 15.

POSITIONS ELSEWHERE

Notice of the following vacancy outside the University has been received by the Office of the President.

Bond University
Vice-Chancellor
Applications requested no

later than December 15. Send to: Mr. A.J.T. Ford, Secretary to the Advisory Council, Bond University, P.O. Box 735, Surfers Paradise, Queensland, Australia 4217.

RESEARCH HIGHLIGHTS

Probing Chromosomes

A U of T geneticist has found a relatively simple and quick way to identify abnormalities and determine gender by probing chromosomes. So far, of the 23 pairs of human chromosomes, markers for six plus the gender-determining X and Y chromosomes have been found.

Professor Huntington F. Willard of the Department of Medical Genetics in the Faculty of Medicine says sensitive chromosome probes, short pieces of DNA that bind to and actually pinpoint particular sites on the chromosomes, can be used for prenatal testing. The probes would show whether there were two copies of a particular chromosome, as there should be, or one or three. They can also be used to indicate the gender of a foetus in families where sex-linked diseases are a risk.

Willard believes the markers are unique to each individual. He calls the probes "DNA fingerprints". Eventually, he says, it will be possible to identify murderers and rapists from the prints they leave in blood or sperm. And, using the markers, scientists will be able to establish the paternity of a particular child.

Though Willard is primarily interested in foetal testing and fingerprinting, his discovery can be applied as well to cancer research. If the probe for chromosome 7 were to show three copies instead of two, it would be signalling the presence of a tumour.

Willard's work is funded by the March of Dimes, the Hospital for Sick Children Foundation and the Medical Research Council.

First centre for biomaterials

Thanks to a \$200,000 grant from the province of Ontario, U of T has established Canada's first centre for biomaterials.

Its director, Dennis Smith, a professor of biomaterials in the Faculty of Dentistry, believes that the increasing numbers of our aging population are putting pressure on scientists to produce devices that keep them from becoming toothless, feeble and bedridden.

Current projects at the centre include the development and improvement of artificial heart valves, dental implants and replacement joints as well as connective tissue research and the encapsulation of insulin.

The centre will provide a national biomaterials information service for government and industry.

Research Highlights is based on summaries of newsworthy research in arts, science, engineering and medicine, sent each month to science writers and editors throughout the world by the public relations office. Faculty interested in this service should contact Steve Lindt, senior media relations officer, at 978-5948.

NOTICE OF REGULATION

The Ministry of Labour has issued notice of a new regulation respecting control of exposure to biological or chemical agents (O.Reg. 654/86). The regulation is effective December 6, 1986, and covers approximately 600 substances. Copies are available for viewing from the Office of Environmental Health and Safety.

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Architecture

Continued from Page 1

"However, future career opportunities will be reviewed with tenured staff members on an individual basis, including the possibility of assignments in other divisions of the University."

The teaching staff will include both academic and professional practitioners "whose participation will be relatively equal in importance and yet distinctive," the report says. "Most of the tenured faculty will have a base in the cognate disciplines, while the professional staff will have a base in their practices."

While the current staffing plan for architecture recognizes the desirability of cross-appointments, the goal has not been realized. "A new staffing plan will be developed by the school in cooperation with other divisions in order to ensure that this objective is met through future appointments."

The school's tenured and tenure-stream faculty will normally hold appointments in other faculties and departments, the report says. "By these means the established standards of other areas of the University will be brought to bear on the hiring, promotion and on-going evaluation of tenured faculty..., especially in relation to research and scholarship."

"It should not be forgotten that other academic units participating in this endeavour will also benefit from their contact with the school," the report adds.

The report recommends that the school develop a clearer definition than now exists of creative professional achievement by faculty members. "It is not to be understood merely as professional practice," the report says. "There must be an element of advancement or leadership of the profession."

Resources

"Ultimately, a decision to continue to commit University resources to the study of architecture and landscape architecture must be justified by the quality of the educational programs provided, by the quality of research, scholarship and creative professional achievement, and by the associated leadership provided to the professions."

The school may in time impose greater financial demands on the University than would an affiliated college, but it is more likely to meet the demand for a high standard of research and education, the report says.

A school "with direct and tangible links with cognate departments, and in the possession of a sound staffing plan entailing the collaboration of other divisions" will ensure that the University makes the most effective use of existing expertise in the creation of the new school.

"Nevertheless, the University's ability to support the programs from the base budget remains severely constrained," the report says. Additional sources of funds are still required for staffing, computing and building improvements.

Provincial grants to facilitate program adjustment, announced early in November for the 1987-88 academic

year, might be a source of additional money for the school, the report says.

Private donations are another. Following the submission in July of the Britton report on the possibility of establishing an independent college of architecture affiliated with the University, President Connell commissioned a consultant to assess the potential of private funding for architecture.

The consultant found that private contributions are "likely to be modest in relation to the need." Nevertheless, the school must approach alumni, members of the architectural professions in general and others for support, the provost's report says.

"This will require the development of a fundraising strategy that will allow the school to contact its natural constituency in a way that is consonant with the University's general fundraising efforts."

The University will provide space and services to the school on the same basis as to the Faculty of Architecture & Landscape Architecture.

Constitution

The proposal for a school of architecture "draws upon the positive features attributed to the proposed independent college, while attempting to avoid the negative features associated with an affiliation arrangement," the report says.

"The school will provide a structure for a partnership between academic professionals and practising professionals, encouraging creative interaction between them and allowing the programs to strike a balance between the academic and applied dimensions of an architectural education."

The school's council would include alumni and other representatives of the architectural professions. It would develop programs and curricula for the school, subject to the approval of Governing Council and academic affairs.

The council would be made up of the president and provost of the University, both *ex officio*, the director of the school, all members of the teaching staff with appointments or cross-appointments of 50 percent or more, eight students from architecture and four from landscape architecture, the deans of arts and science and applied science and engineering or their designates, one member of the administrative staff and 16 others appointed by the provost.

From among the members of the council the director would select an executive committee made up of associate directors, if any, three members of the teaching staff, two students, two members of the professions and two from other academic divisions. The executive committee would act in an advisory capacity to the director.

The provostial advisory board would be made up of distinguished members of the professions, academic leaders in the fields from other universities, the deans of arts and science and applied science and engineering and one or more University faculty members. The board's first task would be to advise the provost on the implementation of the plans for the new school.

The board would then provide advice to the provost on "issues affecting planning and the provision of resources for the programs...and on such matters relating to the school and its

programs as she may from time to time bring before it."

If the school functions well the board might eventually become advisory to the director rather than the provost, the report says.

The report also recommends:

- That a review of the BArch and BLArch programs be initiated within two years of the director's appointment, and that it "include consideration of other models for the delivery of first professional degrees"
- That the provost report annually to the Academic Affairs Committee on the school's operations and delivery of programs and that the school be formally reviewed by the provost in 1990-91
- That a recommendation concerning the master of architecture program, now under review by the Ontario Council on Graduate Studies (OCGS), be made when the OCGS appraisal is received.

Events

The debate concerning the future of the Faculty of Architecture & Landscape Architecture began on Jan. 23, 1986, when President Connell announced that he would be recommending that the faculty be closed in 1990, after students then in first year had graduated. On Feb. 20, the administration submitted a report to a joint meeting of the Planning & Resources and Academic Affairs Committees that said the faculty did not occupy "a position of quality and achievement which is consonant with the standards of excellence which the University expects of its academic programs."

Following receipt of the report, written submissions were requested and the members of the two committees met in joint session to consider the question.

In the responses to the closure recommendation, there was recognition of problems identified in the report, but "reluctance to accept the conclusion that closure was a necessary consequence," the provost's summary says.

The possibility of establishing an independent college of architecture affiliated with the University was raised. In response, President Connell established a task force under Professor John Britton to study the suggestion. While the task force found some merit in the idea of a college, it also identified

disadvantages that it said modification of the current faculty might avoid.

Following receipt of the task force report, the provost undertook further deliberations to arrive at the proposal for the School of Architectural Science & Design. Several dozen written responses to the task force report were received from inside and outside the University. The president and provost met alumni and professional representatives as well as senior academic administrators and other members of the University community to discuss alternatives to closure and an independent college. In addition, the views of university presidents in Canada and the United States from institutions with architecture programs were solicited.

"The present recommendation to establish a School of Architectural Science & Design within the University grows out of this intensive and extensive process of consultation," the report says.

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American teachers honour U of T professor

The American Association of Teachers of Spanish & Portuguese has presented Professor Emeritus Kurt Levy with its Distinguished Service Award "in honour of his many valuable and unique contributions to the association and to the teaching of Spanish and Portuguese." Levy is the first Canadian to receive the

award, presented recently at the association's annual meeting in Madrid.

The award was announced while Levy was teaching in China at the Shanghai International Studies University for four months in 1985. He was the first North American Hispanist to teach there.

PHD ORALS

Please contact the PhD oral examination office at 978-5258 for information regarding time and location for these listings.

Thursday, December 11
Rose Marie Jaco, Department of Social Work, "A Study of the Marriage-Related Learning Interests of Engaged People in Pre-Marital Education Courses." Prof. B. Schlesinger.

Friday, December 12
Tomy Sebastian, Department of Electrical Engineering, "Steady-State Performance of Variable Speed Permanent Magnet Synchronous Motors." Profs. G.R. Slemmon and S.B. Dewan.

Monday, December 15
Luke Solis Egan, Department of Chemistry, "Luminescence Studies of Fluorescently Labelled Polymer Colloid Particles." Prof. M.A. Winnik.

Tuesday, December 16
Christiane Couture, Department of Chemistry, "The Synthesis, Reactivity and Characterization of High Nuclearity Osmium-Platinum Cluster Compounds." Prof. D.H. Farrar.

Barrie Gibbs, Faculty of Management Studies, "Managerial Roles and the Environment." Prof. H. Arnold.

Marc. A. Rosen, Department of Mechanical Engineering, "The Development and Application of a Methodology and Code for Exergy, Cost, Energy and Mass." Prof. D.S. Scott.

Bogdana Maria Shaikh, Department of Education, "A Kaleidoscope of Cultures: The Adjustment of Third World Women Visa Students at Canadian Universities." Prof. I. Winchester.

Wednesday, December 17
Lambert Assamoi, Department of Mechanical Engineering, "A Finite

Element Approach wherein the Errors of Approximation Are Confined to the Constitutive Equations." Prof. B. Tabarrok.

Father Daniel Greene Madigan, S.J., Department of English, "Transformation in George Eliot's Fiction." Prof. F. Flahiff.

James Rini, Department of Medical Biophysics, "Structural Analysis of Carbohydrate Recognition by Pea Lectin: An X-Ray Crystallographic Study." Prof. J.P. Carver.

John David Weinstein, Department of Physics, "K meson anti K meson Molecules." Prof. N. Isgur.

Thursday, December 18
Murray McGillivray, Department of English, "Memorization in the Transmission of the Middle English Romances." Prof. D. Fox.

Richard Charles Nicholson, Department of Biochemistry, "The HSP70 Multi-gene Family in *Saccharomyces cerevisiae*." Prof. L.A. Moran.

Daniel Fielding Thomas, Department of Chemistry, "Molecular Beam Studies of Non-Adiabatic Reactions." Prof. J.C. Polanyi.

James Coleman Wilson, Department of Chemical Engineering & Applied Chemistry, "The Development of a Monte Carlo Calculation for the Accurate Analysis of Photon, Electron and Positron Transport Problems in High-Z Media at Energies to 10 MeV and Its Application to Small Bismuth Germanium Oxide Detectors." Prof. J.S. Hewitt.

Carl John Zorn, Department of Physics, "A Study of the Photoproduction of the Charmed Lambda Photon Energies of 40-160 GeV." Prof. G.J. Luste.

Friday, December 19
Jean Joseph Roger De Lafontaine, Department of Aerospace Science & Engineering, "Orbital Dynamics in a Stochastic Atmosphere and a Non-spherical Gravity Field." Prof. P.C. Hughes.

Barbara Gail Hanson, Department of Sociology, "Attempts to Model Context: Senile Dementia in the Family as a Case Demonstration." Prof. N.W. Bell.

Eric J. Reiner, Department of Chemistry, "A Study of Protonated Gaseous Amines." Prof. A.G. Harrison.

Tuesday, December 23
Randall Scott Dumont, Department of Chemistry, "Characterizations and Consequences of Chaos in Bound Dynamics and Unimolecular Decay." Prof. P.W. Brumer.

Monday, January 5
Wenona Mary Giles, Department of Anthropology, "Motherhood and Wage Labour in London: Portuguese Migrant Women and the Politics of Gender." Prof. G.A. Smith.

Tuesday, January 6
Mark Jandreski, Department of Clinical Biochemistry, "Cardiac Myosin Heavy Chain Gene Expression in Syrian Hamster and Human." Prof. C.C. Liew.

Wednesday, January 7
Patricia Louise Baker, Department of Anthropology, "Banking Transformed: Women's Work and Technological Change in a Canadian Bank." Prof. R.B. Lee.

Friday, January 9
Jacqueline Shirley Solway, Department of Anthropology, "Commercialization and Social Differentiation in a Kalahari Village, Botswana." Prof. R.B. Lee.

Board of Fame grew out of U of T Day

It's the kind of dilemma every host or hostess dreams of: you send invitations to a lot of celebrities and so many of them accept that you don't know where you're going to put them all.

The hostess in this case is Rivi Frankle, director of the Career Centre. The guests are famous U of T alumni who are being invited to join U of T's new Board of Fame.

The board started as one of the Career Centre's U of T Day exhibits. The centre's staff wrote to 25 well-known U of T alumni, asking for pictures and resumes, interesting facts about their careers and details about their U of T connections such as their graduation years, degrees and disciplines.

The alumni contacted were enthusiastic about publicizing their U of T involvement, says Frankle. The pictures submitted were mounted, along with short biographies of the celebrities, on panels in the Career Centre. Frankle says the display caught the attention of visitors on U of T Day.

But responses are still coming in from alumni who missed the U of T Day deadline. Meanwhile, says Frankle, the centre is writing to more alumni to ask them to join the board. Some of the

celebrities already signed up are Bob Rae, Peter Newman, Larry Grossman, Jan Tennant, Paul Martin, Trevor Eyton, Pauline McGibbon, John Black Aird, Murray B. Koffler, Barbara McDougall, Margaret Atwood, Edward L. Greenspan, Garth Drabinsky and Alan Eagleson.

Frankle hopes the board will eventually include more than 200 members. The problem is: how can the centre accommodate so many luminaries in a single display? It would be unwieldy, not to mention expensive. Although the U of T exhibit is still on display in the Career Centre, Frankle fears the centre won't have room for it if it grows. The photos and biographical material could be kept in files but that wouldn't have much visual appeal, says Frankle. Another possibility would be a permanent display featuring selected celebrities on a rotating basis.

Frankle says one of the the board's purposes, from the Career Centre's point of view, is to provide inspiration for students in terms of their career goals. She feels, though, that the more important role of the board is to give students a sense of pride in the University.

Search committee, metallurgy and materials science chair

A search committee has been established to appoint a successor to Professor W.A. Miller as chairman of the Department of Metallurgy & Materials Science. Professor Miller will have completed his five-year term on June 30, 1987. The members are: Professor D.J. Rowe, associate dean, Division III, School of Graduate Studies; Professor M.E. Charles, vice-dean, Faculty of Applied Science & Engineering; Professors Alex McLean and G.S. Dobby, Department of Metallurgy & Materials Science; Professor R.D. Venter, chairman, Department of Mechanical Engineering; Professor J.D. Lavers, Department of Electrical Engineering; and Professor G.W. Heinke, dean, Faculty of

Applied Science & Engineering (chairman).

The committee welcomes communications or recommendations concerning this appointment. They should be directed to the chairman of the committee.

Alumni nominations sought

On behalf of the College of Electors, the chairman, Brian O'Riordan, has issued a call for nominations for three alumni representatives to serve on Governing Council from July 1, 1987 to June 30, 1990. The three-year terms of Dorothy Hellebust (Victoria 1958), Brian Hill (Scarborough 1978) and R. Gordon Romans (School of Graduate Studies 1942) expire on June 30, 1987. All are eligible for re-election.

The deadline for receipt of nominations is 4 p.m., February 24. Candidates will be invited to meet with the College of Electors.

A candidate must be an alumnus/a of the University and must not be a member of the staff or a student of the University; must be willing to attend frequent meetings of the Governing Council and its committees; and must be a Canadian citizen.

The University of Toronto Act, 1971 as amended by 1978, Chapter 88, defines alumni as "persons who have received degrees or post-secondary diplomas or certificates from the University, or persons who have completed one year of full-time studies, or the equivalent thereof as determined by the Governing Council, towards a degree, diploma or certificate and are no longer registered at the University."

Further information about Governing Council and nomination forms may be obtained by writing to the secretary, College of Electors, room 106, Simcoe Hall, or by telephoning 978-6576.

EQUIPMENT EXCHANGE

The "Equipment Exchange" is a Purchasing service to facilitate the recycling of surplus equipment within the University. Once a faculty or division head has determined that an item of equipment or furniture is no longer needed, a "Request for Disposal" form is forwarded from the administrative head to Purchasing (see UNIFACTS procedure 4-18 "Disposal of Furniture and Equipment"). The fair market value is assessed and for external sales terms of delivery, payment, duty and tax implications are determined. All necessary paperwork including invoicing, UNISPRING update etc. will be carried out in Purchasing. If equipment or furniture is no longer required by the other U of T divisions it is then available for external sale including personal purchase. Note: the exchange will also include "wanted" items.

Equipment Available Description	Qty	Model	Age	Orig.Cost	Fair Mkt Value	Contact-Phone
Hydraulic Trainer	1	?	?	approx.\$5,000	negotiable	Gordon Mitchell 978-3214

Travel Programme

Pre-paid tickets may be a viable alternative to reimbursing visiting guests or non-University of Toronto persons through requests for reimbursement after they have completed their travel. Though the airlines charge a \$20 fee for issuing a pre-paid ticket this may outweigh the expense of the time-consuming process of reimbursement after the fact. The procedure for booking reservations is the same but the airlines suggest 1½ hours of lead time to process a pre-paid for domestic flights and 2 hours for international.

Seat selection is becoming a very popular request by most travellers but it is not available through all airlines at present. In addition travellers should be aware of the possible exceptions: 1) where an airline does not have this capability; 2) the airline can close advance seat selection once a certain number of seats have been selected; and 3) where a smoking or non-smoking section of a plane has been filled. This helps to explain why two people taking the same flight may not have both received advance seat selection.

Travel co-ordinator/arranger workpads are available to assist you in making travel reservations and can be used by either the traveller or the travel arranger. Workpads are available through any of the University's 3 Preferred Travel Agents.

Scientists and the world they live in

by John C. Polanyi

Following is part of an address given by Professor John Polanyi to a joint meeting of the Empire and Canadian Clubs Nov. 27.

The pursuit of any goal worth achieving involves a high element of risk. The great British scientist Lord Kelvin, looking back over his illustrious career, intoned: "One thing stands out above all others in my recollections of a lifetime in research; it is *failure*". (I quote from memory).

It takes a trained and discerning researcher to keep the goal in sight, and to detect evidence of the creeping progress toward it.

Not only must the researcher exhibit these qualities; so also must the sponsor of research. During the crucial 14 years prior to our work becoming somewhat established, it was evaluated annually in Ottawa. Fortunately, this evaluation was made by those who were themselves currently engaged in research. In arriving at their decisions as to whether to continue the support of our work, and at what level of funding, they followed the advice of leading scientists around the world whom they consulted. The criteria they applied were scientific significance and evidence of progress toward the goal.

Had they asked whether the research was likely to produce applications and whether those applications would accord with the socio-economic priorities of the day, they would surely have despaired of our work after a few years. They would therefore have killed it by failing to provide the continuity of support necessary in order for us to complete our rather lengthy journey.

It must be evident that I owe the Canadian taxpayer and the departments of government that administer scientific funding a substantial debt of gratitude. I have indeed been fortunate, and I am very grateful. To this I would add that the overwhelming generosity of Canadians — from first ministers to janitors — has had the result that there could not possibly be a more satisfying experience than to win this particular prize in this country.

And yet you may know that on the day the bombshell of the prize exploded in my living room, when asked by reporters what would be my advice to talented and ambitious Canadian scientists, I replied that I would suggest they go abroad. I did not relish giving that response, but at this juncture in our scientific history it is the only answer that I can give. In truth, a talented and ambitious scientist would be unlikely to ask me that question, since the answer would be obvious to him.

Fortunately for us there are scientists of very high quality who ignore such promptings, and remain here. Canada, let me tell the Empire and Canadian Clubs, is a wonderful country. People want to live here. Scientists, myself among them, are no exception. We should be clear, however, that these individuals live here at a price to their scientific careers that many will not be willing to pay.

We who remain are impoverished by the departure of the others, since the intellectual environment in which one does science is of crucial importance. It is not, I should add, that the numbers leaving are huge. It is just that the marketplace works to ensure that those who leave are most often the best.

To remain is to pursue science in the face of two further obstacles. The physical resources in terms of direct research funding and indirect institutional support that we offer to our scientists are a fraction of those available to a similarly talented individual in the



United States. (The comparison of course makes allowance for differing funding arrangements in the two countries.)

I sat on a committee of the Science Council of Canada a few years ago that, after extensive study, came to the conclusion that the individual researcher in this country disposes of about one-third of the funds of a similar US scientist. I duly reported this to a weary minister of state for science in the federal government. "But that's pretty good," he responded, "given the fact that the US population is 10 times ours." That, I explained does not mean that scientific discovery is 10 times easier here. Funding per researcher must be made comparable. Some day, if we demand it, it will be.

The second jeopardy is more subtle and insidious. It is the constant attempt in this country to make fundamental science responsive to the marketplace.

Because technology needs science, it is tempting to require that scientific projects be justified in terms of the worth of the technology that they can be expected to generate. The effect of applying this criterion is, however, to restrict science to developed fields where the links to technology are most evident.

By continually looking for a short term pay-off we disqualify the sort of science that I have been discussing in these remarks; science that attempts to answer fundamental questions, and, having answered them, suggests fundamentally new approaches in the realm of applications.

The barely detectable infrared luminescence that Ken Cashion

observed in 1957 led three years later to a suggestion for infrared (IR) lasers — we called them "irasers" since the term laser was not yet established. A decade later the sort of laser we proposed, based on vibrational excitation, had become the most powerful source of infrared radiation in existence. Yet another decade passed before it began to be evident what the market might be for such lasers.

What we see here is the "scientific push", stemming from discovery, creating the opportunity for new technology. "Technological pull" cannot be asked to produce innovative basic science, since the progress of science has its own logic which we ignore at our peril.

Once, however, a discovery emerges, the interacting skills of the engineer and entrepreneur can take over in the next of the risky and demanding stages along the path that leads from research to development. It is not by chance that this is known as R and D, rather than D and R.

I am assured that the business community is well represented in this audience. You have a reputation for being hard-nosed pragmatists, one eye focused at all times on the bottom line. If that is so, our lives don't differ as much as you may think.

It is true that the bottom line is not the same; I must make discoveries, you must make a profit. It is also true, I hope, that you are better at making a profit than I am at making discoveries (I almost never make a discovery). But along the way the forces with which we must contend are similar.

We both live by our wits — a common

limitation. To varying degrees we are supported just so long as we gamble and win. You may think that you risk more than we do. You may be right. If you lose, you lose your shirt. As for the academic, he keeps his shirt but forfeits his reputation, his research support, and his ability to do the thing for which he has trained all his life. The gamble is real for him too.

More interesting still, he gambles within constraints that you will readily recognize. There is an unthinking assumption that the twin tyrants, time and money, that govern your lives, do not rule his. This is a superficial view. To be competitive, and my colleagues are competitive in the extreme, a scientist must deliver science which evidences quality and quantity, that falls within the pre-arranged budget, and that is completed as nearly as possible within the promised time-frame.

The prizes for making a discovery after someone else has already made it are smaller.

You will have no difficulty whatever in translating this into your own lives. I tell this story in order to stress that, though we do different things, we do them in very much the same world. The ivory tower does not conceal an opium den.

Here and there, in the recesses of academe, it is true that you will find people sleeping. But you will also find, in far larger numbers, people who work hours that are preposterous, because they are determined to do something notable. Many do. Not all, because, as I have insisted, this is a high-risk enterprise.

People ask me about waste in the universities. My reply is that I see more of it today than 15 years ago. It is the waste of human resources due to underfunding. A device is built by a faculty member that could have been more expeditiously and efficiently bought. . . 40 professors, supervising 140 graduate students, are provided with two secretaries. . . resources in a nation or province are, I know, limited, but we can, I would think, do better in utilizing them.

I have been speaking a good deal about science in Canada, and a little (since I know less) about technology. Both are important to our future. Why do people like myself, and I am one of many, believe that we in Canada must have both: flourishing science in addition to vigorous technology?

First, because a nation is more than a machine for creating wealth. Science is the glory as well as the terror of mankind. Our respect for ourselves as a people requires that we, as a prosperous and civilized nation, contribute to this central strand in 20th century culture.

I am diffident about saying this, but the letters that have come to me from a great number of Canadians give evidence of the desire of people in all walks of life to see their country actively participate, rather than to be on-lookers at the feast of discovery.

Secondly, we need to excel in some areas of modern science, so that we can improve our chances of doing the same in technology. We cannot as a nation tinker our way to technological ascendancy. Advances in, say, microcircuitry and genetic engineering are not achieved by self-educated inventors at a bench in the basement, but by individuals whose skills have been honed in the best scientific environment the world has to offer.

Nor can we afford to depend for scientific understanding exclusively on what is published abroad. To use science well,

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Scientists

Continued from Page 9

you must understand it well. To understand it well, you must do it well.

Happily, we need have no doubt that we can.

All of my themes could be illustrated in the realm of nuclear technology. Studies of the atomic nucleus in the mid-1930s were presumed to have no possible application. By the mid-1940s they had led to weapons capable of destroying cities, and by the 1950s to the weapons of today that threaten civilizations.

The revolution in warfare that had been heralded with the appearance on the scene of crossbows, then dynamite and next machine-guns, had finally come. No serious person today can be heard to argue that a war between combatants armed with hydrogen bombs could be justified as a means of settling national differences, since following such an event the differences would no longer be of the slightest interest. To allow such weapons to be used would be an act of criminal folly.

The superpowers say they believe this, but it will take more than words for them to convince one another that they do. Actions are needed. The only sort of action likely to convey the message with sufficient clarity is bilateral, verified, nuclear disarmament.

I am not referring to total disarmament, since I do not believe that we can disinvest nuclear weapons to such a degree that we can return to the barbarism of the pre-nuclear era, in which we slaughtered millions in non-nuclear conflicts. Nuclear disarmament is not a means to make the world safe for conventional warfare. The aspect of the Reykjavik discussions that dealt with abolition of nuclear weapons was in my view posturing.

What was real was the notion that a halving of the level of nuclear weaponry could create a new political climate in which the danger of a disastrous war by inadvertence would be much diminished. It would be an act unprecedented in history for two nations with profound unresolved differences to agree to set aside a large portion of their weaponry. "Our differences remain," they would be saying, "but we shall, because we must, settle them without resort to such weapons."

It is vital to our future that the great

powers give each other this assurance. Since it is our future that is at stake, we in Canada have not only the right but the duty to urge the parties on toward agreement.

We should, I believe, applaud President Reagan for insisting that meetings be held against a backdrop of contention over such fundamental questions as human rights. This is the real world, and it should be acknowledged as such.

We should, however, take strong exception to US espousal of antimissile defences (the SDI), whose deployment would require an abrogation of the greatest achievement of arms control to date — the 1972 ABM treaty — a treaty that we owe to the farsightedness of an earlier US administration.

Not only will the SDI undermine existing treaties, it will also make it impossible to negotiate new ones. In referring to the strategic defence initiative, the president has said that it "threatens no one". Reflecting, however, on the possibility of Soviet advances of a similar nature, he has said that, if permitted to occur, they would leave his country with only two options; "surrender or suicide". A shield on one side, far from "threatening no one", is profoundly disturbing to an opponent, who sees his nuclear arsenal being diminished in effectiveness. In effect he is being unilaterally disarmed.

The likelihood that in the face of this he will enter into agreements for widespread disarmament is nil.

Mr. Reagan may well be right in believing that fear of the US SDI has helped bring the USSR to the negotiating table. The Soviets assumed, since the US had said as much, that the SDI was actually on the negotiating table. If they find that it is not, they will be forced, for good reasons, to abandon the negotiations. A historic opportunity will have been lost.

And for what? It is a dream to suppose that the technology of defence can be so effective, in the face of a determined onslaught, that the attack can be rendered "impotent". At intervals this is admitted even by leading SDI proponents. Alternative rationales for retaining SDI are then put forward.

Some would claim that the Soviet Union is using the SDI as an excuse to prevent a disarmament agreement from being reached. They may be right. The only responsible path on the part of the west would be to give way on the SDI — which Sir Geoffrey Howe, Margaret Thatcher's foreign secretary, once characterized as a "Magenot Line in the sky" — whereupon we would find out whether the USSR wanted disarmament.

I have given you my views on these matters not because I have been elected by the Nobel Foundation to the vacant post of Delphic oracle. I am a chemist. I talk about these questions of war and peace for the same reason that I have spoken about them for over 25 years. They are of overriding importance, and are necessarily the concern of the literate and the numerate in every profession — including your own.

Science and technology have, through the advent of weapons of mass destruction, issued a challenge to mankind. Adapt or perish. Without the vigorous and imaginative involvement of all thoughtful citizens we cannot hope to make the necessary changes in patterns of thought, before disaster overtakes us. Scientists, engineers, physicians, lawyers, members of the business community, and others with the privilege of education have a special responsibility to read, think and advise. I would urge you, as a duty to the coming generations, to consider how you might become more involved in this vital and urgent debate.

A wise man in China asked his gardener to plant a shrub. The gardener objected that it only flowered once in a hundred years. In that case, said the wise man, plant it immediately.

PERSONNEL NEWS

A working group established by the comptroller and the directors of personnel and business information systems has been at work for some months to develop recommended improvements in the procedures for processing data for the personnel/payroll systems. The working group includes divisional representation as follows: Moira Alexander, Faculty of Medicine; June Clarke, Erindale College; Louise Hopkinson, Scarborough College; Steve Hudson, Physical Plant; Linda Lewis, Faculty of Arts & Science; and one member to be announced, Faculty of Applied Science & Engineering.

The members from the central departments include: Marlies Burkhard, Business Information Systems (*chair*); David Cairns, Wanda Chmiel, Lisa Raftis and Sandra Winter, Human Resources; Claudia Colas, Business Information Systems; Lu Ann England and Linda Osborne, Payroll Department; and Winston Tamaya, Benefits Accounting. Jean Peers, consultant to Human Resources for

user training, is also included.

The working group will welcome any comments from departments on any areas of concern or recommendations for changes to current personnel/payroll procedures. These may be communicated through your divisional representative, to any member of the working group, or in writing to: Working Group on Personnel/Payroll Systems, 215 Huron Street, 4th Floor, Attention: M. Burkhard, Chair

Job openings

Below is a partial list of job openings at the University. The complete list is on staff bulletin boards. To apply for a position, submit a written application to the Personnel Department.

(1) Sylvia Holland; (2) Steve Dyce; (3) Varujan Gharakhanian; (4) Christine Marchese; (5) Maureen Brown; (6) Mirella Taiariol.

Clerk Typist II

(\$7,545 — 8,875 — 10,205)
Clinical Biochemistry, 50 percent full-time (1)

Clerk Typist III

(\$16,570 — 19,490 — 22,410)
Management Studies, 60 percent full-time (4), Surgery, 60 percent full-time (1)

Fire Prevention Officer

(\$27,500 — 32,350 — 37,200)
Physical Plant (1)

Laboratory Technician II

(\$20,230 — 23,800 — 27,370)
Banting & Best Medical Research (5), Medicine (1)

Library Technician III

(\$15,090 — 17,750 — 20,410)
Law (6)

Occupational Health Nurse

(\$27,500 — 32,350 — 37,200)
Environmental Health & Safety, full-time funding until April 30, 1987 (2)

Senior Mechanical

Draftsman
(\$24,800 — 29,180 — 33,500)
Physical Plant (1)

Alumni Faculty Award

The University of Toronto Alumni Association invites nominations from the University community for the 12th annual Alumni Faculty Award.

Selection will be based on:

- academic excellence
- service to the University
- contribution to the community

The selection committee consists of the chancellor, the provost, the presidents of the University of Toronto Faculty Association, Students' Administrative Council, Association of Part-time Undergraduate Students and Graduate Students' Union and members of the Faculty Liaison Committee.

Nominations close on *January 23*, at 5 p.m. They should include a résumé documenting the qualifications of the nominee according to the selection criteria. Nominations should be addressed to: The Chairman, Faculty Liaison Committee, Alumni House, 47 Willcocks St. For further information please call 978-2365.

The award will be presented at a

dinner in Hart House April 8. The recipient will address one of the graduating classes during the spring Convocation.

Library fundraising event

As its first fundraiser, the University Library has organized a visit to the Teller's Cage in Toronto on Jan. 15, for dinner and the hit musical comedy *Nunsense*. Tickets are \$39.95 to include dinner (with choice of appetizer, entree and dessert, tea or coffee), the show, service charge and tax, and a \$10 donation to the library (for which a tax receipt will be issued).

Tickets are available only from Alan Horne, development and public affairs coordinator, Robarts Library, 978-7644 or 978-2292. Cheques should be made payable to the University of Toronto.

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The Faculty Club

41 Willcocks Street
Telephone: 978-6325



Merry Christmas

from

Gina Friend and her Staff

The Club will close on Tuesday December 23, at 3 p.m. and re-open on Monday, January 5.

Finding answers to the big questions or, how to get something for nothing

by George Cook

How do we account for the structure and size of the universe? How did it all begin?

Now that the great metaphysical questions are well within the realm of empirical inquiry, a group of Canadian researchers, including Professor Richard Bond of the University's Canadian Institute for Theoretical Astrophysics (CITA), is matching wits with colleagues around the world in a race to develop interpretive models to account for a wealth of new data on the structure and, therefore, origin of the cosmos. "Then we will learn how galaxies and voids formed and, ultimately, since the earth and sun are derivative things, how, when, where and why we formed."

With the financial support of the Canadian Institute for Advanced Research (CIAR), an independent foundation that sponsors major research projects, Bond and his associates elsewhere in North America have formed a team of researchers to (quite simply) explain the universe. The team includes Bond, a Canadian who came to CITA from Stanford University, William Unruh of the University of British Columbia, Werner Israel of the University of Alberta, Ian Affleck and James Peebles, both of Princeton University, and Mark Wise of the California Institute of Technology. A \$2 million, five-year grant has been provided by the CIAR for the cosmology project to pay the salaries of four members of the group, relieving them of teaching duties, and cover the expenses of two others. Their plan of attack will develop as the specific problems are defined; in general, they plan to use new information to test new theories.

"Cosmology has undergone a huge injection of energy in the past seven or eight years," says Bond. New data, collected in space, have revealed large regions of the universe with no bright galaxies and, on their surfaces, structures called superclusters. These clusters form a vast latticework of galaxies — some have likened it to a universal sponge, others to interconnected bubbles — of high and low densities: the universal structure.

The latticework is larger than had been imagined, says Bond. "It could go up to 1,000 million light years, which is a remarkable thing if true." It is also difficult to explain. What kind of explosion (how big *was* the Big Bang?) in how many dimensions (are there four or 10?) given what sort of matter and energy (discrete quanta or vibrating "strings")

could have produced a universe so vast and intricate?

The most promising hypothesis says the universe began in an extremely dense, uniform state, exploded and continued to expand. In the course of this expansion, the latticework structure of high and low densities developed. "The universe is unstable," Bond says. "Positive bumps in density have a little more mass than regions with negative density bumps. The universe wants to make little bumps big bumps. That means the regions with slightly more mass get even more and, as a result, the rich structure of the universe grows, in a natural way."

Cosmos

The theory of the very early cosmos — one that attempts to take us back to a time when the universe was less than one second old — has grown out of interpretations of recently observed phenomena and some hypothesized ones, those thought to exist but as yet undiscovered. To understand the rationale for the Big Bang, we must first understand the characteristics of the universe as we find it, some 15 to 20 billion years later. One such characteristic is its structure, another its size. A third is known as the "microwave background".

We are bathed in a universal background radiation, Bond explains. It is isotropic — roughly the same temperature in every direction. At 2.7 degrees Kelvin (zero degrees K, absolute zero, equals -273.15 degrees Centigrade), this constant radiation is quite cold, but must once have been unimaginably hot. "It is the nature of this radiation that tells us that the universe was once in a highly compressed state. The idea is that because the universe is expanding there must have been a time when it was extremely hot, in what's called thermal equilibrium, which means the photons were all trapped."

Researchers are now looking for slight variations in the microwave background and a number have already reported findings. By measuring these fluctuations, as they exist today, we may learn what the universe was like, in terms of small deviations from uniformity, at the tender age of a million years and earlier. "With the microwave background at one million years, everything is quite simple, because the perturbations are so small. You can do a mathematical calculation and solve the problem exactly."

Other data allow us to describe the

cosmos at even earlier epochs. The abundance of light elements, such as hydrogen and deuterium, leads us to conclusions regarding the conditions existing at one to three minutes. Another major class of contemporary data deals with dark matter, "one of the most mysterious puzzles we now have in astronomy". More than 90 percent of the universe is in this form. "It's not normal matter," Bond says. "It isn't primarily neutrons, protons and electrons. So the question is: what is it?" According to the best current thinking, dark matter is either the remnant of low mass stars or massive stars (black holes) or, alternatively, elementary particles, neutrinos perhaps, light but with mass and therefore able to affect gravity. "They would be very weakly interacting, which means they're extremely difficult for us to detect."

It is also possible dark matter consists of hitherto undiscovered particles more exotic than the neutrino. "There was an experiment done at Stanford," Bond says, "in which they thought they'd discovered a monopole created when the universe was 10^{-37} seconds old. It turned out to be a spurious event, but it indicates the kind of experiments people are doing — imaginative, high-precision experiments looking for the exotic candidates for dark matter."

To find particles created when the universe was less than a second old would be to find a trace or remnant of the very moment of creation, "the most important astronomical discovery of the past 20 years."

Forces

Fifteen years ago, no theorist would have attempted to describe the universe before the epoch of one second. "Then a great development occurred — now the major thrust of particle physics — called Grand Unified Theory, the idea of unifying all interactions in one general theory." As a consequence, it has become possible to theorize cogently about the universe at 10^{-43} seconds.

Given unified theory (or theories — the matter is not yet settled), the universe might have undergone a phase transition, like the transition of water to steam, liquid to gas, at the moment of its conception. At that point it was simply energy in a vacuum. "That sounds like a contradiction in terms," Bond says. "If there's a vacuum how can there be anything there? But the current view in particle physics is that the vacuum is alive." The energy involved created a cosmological condition

called inflation, and the universe expanded rapidly.

However, the observable structure and size of the cosmos do not fit the theory of phase transition and inflation exactly; the universe may be too large for the theory to explain. As a result, Bond and his associates are also trying to describe the likely condition of the early universe in a manner consistent with the theory inflation and the structure we observe today. To do this, they have begun to explore a new theory of matter and energy, one which describes elementary particles not as discrete quanta in four dimensions with varying levels of energy, but as vibrating "strings" in 10 dimensions.

"This takes us back to the earliest epochs — dark, murky times. Particle physicists and astronomers have been on the edge of their seats following the developments. It has made a grand meshing of the physics of the very, very small and the physics of the very, very large."

And what was the cosmos before there was one, before the Big Bang? "What you start with is a vacuum, in a quiescent state, and what you end up with is a universe with its structures. But this is really quite speculative — interesting mathematical exercises that may have nothing to do with how the universe actually operates." The speculative theory of ultimate origins has been dubbed "how to get something for nothing", says Bond. "It doesn't say what gave rise to the vacuum itself, so obviously there are some issues that can't be addressed easily. We need something to work with. The great hope, of course, is that by the observations we now have we can probe these very early times. Who knows how far we'll be able to penetrate through a combination of observations, indirect argument and theoretical developments?"

Bond insists that the answers to the big questions, when they come, will be firmly anchored in observation. "Of course there is a danger of going off, like the theologians of the scholastic age, on the wrong track if one isn't strongly tied to the data. But by confronting observations and throwing out theories that don't work, we are making this a hard science."

The universe — with its superclusters, microwave background, dark matter and elementary particle strings — is a coded message from the past and we are "right on the edge" of making discoveries that will break the code, Bond says. "It is tremendously exciting."

Events

LECTURES

Myocardial Ischemia and Reperfusion Injury.

Monday, December 8
Dr. G.J. Wilson, Department of Pathology. Cummings Auditorium, Women's College Hospital. 4.15 p.m. (Pathology)

Schizophrenia: Anxiety Disorders and Depression.

Wednesday, December 10
Prof. Sebastian Littmann, University of Calgary; visiting Department of Psychiatry. Ninth floor conference room, Mount Sinai Hospital. 5 p.m. (Psychiatry)

What the National Defence College Means to Canada.

Wednesday, December 10
Prof. Peter Meincke, University of Prince Edward Island. 179 University College. 8 p.m.

(Science for Peace, Canadian Physicians for the Prevention of Nuclear War, Lawyers for Social Responsibility, Educators for Social Responsibility and Psychologists for Social Responsibility)

Delayed Hypersensitivity and Chronic Inflammatory Processes.

Monday, December 15
Dr. J.B. Hay, Departments of Immunology and Pathology. Cummings Auditorium, Women's College Hospital. 4.15 p.m. (Pathology)

Municipalities and Peace: The Toronto Experience.

Wednesday, December 17
Councillor Jack Layton, chairman of the Board of Health. 179 University College. 8 p.m.
(Science for Peace, Canadian Physicians for the Prevention of Nuclear War, Lawyers for Social Responsibility, Educators for Social Responsibility and Psychologists for Social Responsibility)

The Role of the Lymphatic Circulatory System in Shock.

Monday, January 5
Dr. M.G. Johnston, Department of Pathology. Cummings Auditorium, Women's College Hospital. 4.15 p.m. (Pathology)

The Anatomical Distribution of Cervical Adenocarcinoma-in-Situ: Implications for Cytologic Detection and Treatment.

Monday, January 12
Dr. T.J. Colgan, Department of Pathology. Cummings Auditorium, Women's College Hospital. 4.15 p.m. (Pathology)

Reverse Angle: Shooting from a Feminist Perspective.

Monday, January 12
Prof. Kay Armatage, Women's Studies & Cinema Studies Program. 2-212/2-213, Ontario Institute for Studies in Education, 252 Bloor St. W. 8 p.m. (Women's Studies in Education, OISE)

Dramatis Personae: Amateur Theatre at the University of Toronto 1879-1939 is on display at the Thomas Fisher Rare Book Library until Jan. 5.



COLLOQUIA

Accurate Stellar Masses and Radii: Comparison with Models of Stellar Evolution.

Wednesday, December 10
Johannes Andersen, Center for Astrophysics, Harvard College Observatory. 137 McLennan Physical Laboratories. 3.10 p.m. (Astronomy)

Modern Maori Artists of New Zealand: Traditional Religion and Modern Mixtures.

Friday, December 12
Prof. Albert Moore, University of Otago. Centre for Religious Studies Lounge, 14-352 Robarts Library. 1.15 p.m.
(Centre for Religious Studies and Department of Religious Studies)

History of Canadian Science.

Thursday, January 8
J.W. McGowan, National Museum of Science and Technology, Ottawa. 102 McLennan Physical Laboratories. 4.10 p.m. (Physics)

SEMINARS

Performance in Cold Water: Lessons from the Diving Women of Korea.

Monday, December 8
Prof. Donald Rennie, visiting Rosenstadt scholar, School of Physical & Health Education. Board Room, Benson Building. 4 p.m. (P&HE)

Wind Engineering.

Thursday, December 11
Prof. A.G. Davenport, University of Western Ontario. 252 Mechanical Engineering Building. 3.30 p.m. (MEGSA)

Why the U.S. Will Enact Acid Rain Controls.

Thursday, December 11
Michael Perley, Canadian Coalition on Acid Rain. 211 Haultain Building. 4 p.m. (IES)

The City as Text: The Landscape of Charismatic Rule in 18th Century Candy.

Monday, January 5
Prof. James Duncan, Syracuse University; Literacy and Computing series. Coach House, 39A Queen's Park Cres. E. 4 p.m. (McLuhan Program)

Paleography in England: 1500-1700, I.

Friday, January 9
Anne Quick, Records of Early English Drama; Manuscripts, Books and Libraries from Petrarch to Milton series. 321 Pratt Library, Victoria College. 2 to 4 p.m.
(Reformation & Renaissance Studies)

Keeping Warm in the Himalayas: Gujar Blankets and Ladakhi Felts.

Monday, January 12
Prof. Michael Gervers, Department of History. 2090A Sidney Smith Hall. 3 p.m.
(South Asian Studies)

GOVERNING COUNCIL & COMMITTEES

Committee on Campus & Community Affairs

Tuesday, December 9
Council Chamber, Simcoe Hall. 4 p.m.

Academic Affairs Committee

Thursday, December 11
Council Chamber, Simcoe Hall. 4 p.m.

Planning & Resources Committee

Monday, December 15
Council Chamber, Simcoe Hall. 4 p.m.

Business Affairs Committee

Wednesday, December 17
Council Chamber, Simcoe Hall. 4 p.m.

FILMS

Gandhi (part 1).

Wednesday, January 7
Richard Attenborough production. Room 153, Level A, Audiovisual Library, Sigmund Samuel Library. 12 noon to 1.35 p.m.
(South Asian Studies)

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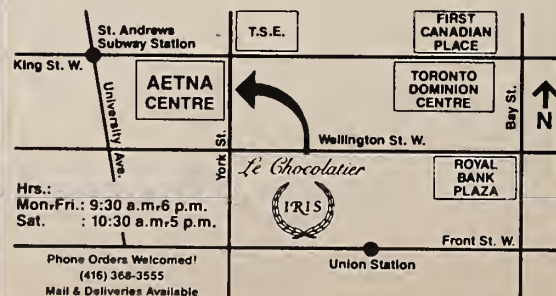
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EXHIBITIONS

Scarborough Campus.

To December 12

Physical Suspense, sculpture by Magdalen Celestino. The Gallery, Scarborough Campus. Gallery hours: Monday to Thursday, 9 a.m. to 7 p.m.; Friday, 9 a.m. to 5 p.m.; Sunday, 2 to 5 p.m.

Justina M. Barnicke Gallery, Hart House.

To December 13

East Gallery: Hart House Collects: The 1980s. West Gallery: Lois Ellis, Works on Paper. Gallery hours: Tuesday to Thursday, 11 a.m. to 9 p.m.; Friday, Saturday, 11 a.m. to 6 p.m.; Sunday, 2 to 5 p.m.

Faculty of Architecture and Landscape Architecture.

To December 18

The Aga Khan Awards for Architecture, 1980-86. Winners of the triennial awards for Islamic architecture. Courtesy of the Aga Khan Awards for Architecture. Galleries, 230 College St. Gallery hours: Monday to Friday, 9 a.m. to 5 p.m.

Tagore, An Apostle of Peace.

To December 22

Commemorates the 125th anniversary of Tagore's birth. Robarts Library, Main Display Area. Hours: Monday to Friday, 8.30 a.m. to 12 noon; Saturday, 9 a.m. to 5 p.m.; Sunday, 1 to 10 p.m. (Rabindranath Tagore Lectureship Foundation)

Thomas Fisher Rare Book Library.

To January 5

Dramatis Personae: amateur theatre at the University of Toronto, 1879 to 1939; exhibition organized by University Archives. Hours: Monday-Friday, 9 a.m. to 5 p.m.

Erindale College

December 15 to December 22
Choung Za Kim exhibits her most recent work.

January 5 to February 1
Paintings by Ian Bibby. Art Gallery, Erindale Campus. Gallery Hours: Monday to Friday, 11 a.m. to 7 p.m.; Saturday and Sunday, 12 noon to 5 p.m.

Eyes.

January 12 to January 23.
Faculty of Education annual student art exhibition. Room 24, Faculty of Education, 371 Bloor St. W. Hours: Opening day, 5.30 p.m. Information re hours: 978-7275.

MUSIC

Master Class.

Wednesday, December 10

David Shifrin, clarinet. Recital Hall. 7 to 9.30 p.m. Tickets \$5.

Conservatory Singers.

Wednesday, December 10

Giles Bryant, conductor. Concert Hall. 8 p.m. Tickets \$8, students and seniors \$5.

Sunday Concert Series.

December 14

Boys Choir of St. James Cathedral; Giles Bryant, conductor. Walker Court, Art Gallery of Ontario. 3 p.m.

Information on all Conservatory concerts available from publicity office, 978-3771.

Events deadlines

Please note that information for Events listings must be received in writing at the *Bulletin* offices, 45 Willcocks St., by the following times:

Events taking place
January 12 to 26:
Monday, December 22

Events taking place
January 26 to February 9:
Monday, January 12

NOTEBOOK

Bulletin staffers were vying for the privilege of reporting on a research project described in the annual report of the Social Sciences & Humanities Research Council as "Aphrodisias in Caria: the small finds". Assuming "aphrodisias" to be the process of administering aphrodisiacs and with visions of ancient tokens that could change our lives, we approached the researcher, **Sheila Campbell** of the Pontifical Institute of Mediaeval Studies. There was a polite, horrified silence before she explained that the ancient city of Aphrodisias was the focus of her research.



When **Chris Johnson**, graphic artist at the *Bulletin*, created the paper's Christmas 1978 illustration, little did he know that it would be immortalized in a mathematics textbook. The drawing, a pyramid of squares in the shape of a Christmas tree, caught the eye of **Laurence Ridge** of the Faculty of Education, who asked for permission to use it in a book he was preparing for publication. Johnson said yes and promptly forgot about it until last month, when he found it illustrating the theory of triangular numbers in his son's Grade 8 math book. His son was not impressed. All Johnson knows about the theory is that $T_4 = 10$, as in 10-pin bowling.

Fergus Craik and **Peter Herman** of the Department of Psychology are editing a departmental newsletter that rivals "Notebook". Among its news items is a report of a \$100,000 grant of rather limited appeal — for a comparative study of polygraphy in Israel, Hawaii, Australia and Hungary. The deadline for applications had already passed before the newsletter came out, but the item was included anyway, presumably so that the editors could suggest as a motto for the sponsor, the Nevada State College of Justice, *In Reno Veritas*.

Rivals "Notebook"? "Surpasses" might be more accurate, at least in the case of a gripping description of a tennis game between a member of the psychology department, **John Furedy**, and **George Connell** ("the world's tallest free-standing university president").

There's also a report of new regulations governing smoking in the psychology lounge of Sidney Smith Hall. Smoking isn't permitted there between noon and 2 p.m., says the newsletter, but designated undergraduates are. It continues with the reassuring news that it hasn't yet been decided whether or not smoking will be permitted in private offices, but undergraduates will be.

One further item, which we can't resist reporting in full: "**Eva Louie** is the department's new accountant. She graduated recently from U of T and held a number of part-time positions before joining us. Under Eva's capable guidance, we are about to become one of the first departments at U of T to switch over to computer-entry accounting. As a result, we will be in position to become one of the first departments at U of T to switch back to the old way."

Under the headline "Worms Win Cake Fight!" the recent *Trinity Convocation Bulletin* imparted the cryptic message that, for only the third time in history, the first-year men had stormed through Henderson Tower to the sundial in the middle of the quad. A lengthy investigation by our reporting team has uncovered the whole story. Every fall, the first-year Trinity women bake a cake and the first-year men ("worms") try to put a piece of it on the sundial. To reach it, they must break through a human barricade formed by second-year men at the base of the tower. Meanwhile, residents in overhead bedrooms pour buckets of foul and fermenting slop on the invaders, nattily and wisely attired in plastic garbage bags. Informed sources report that the women don't necessarily bake the cake these days; they sometimes buy it. Unsubstantiated reports claim there was no cake involved this year. But our sources confirm the dousing with slop and the fact that it was foul. It is good to know that ceremony and tradition are alive and well.

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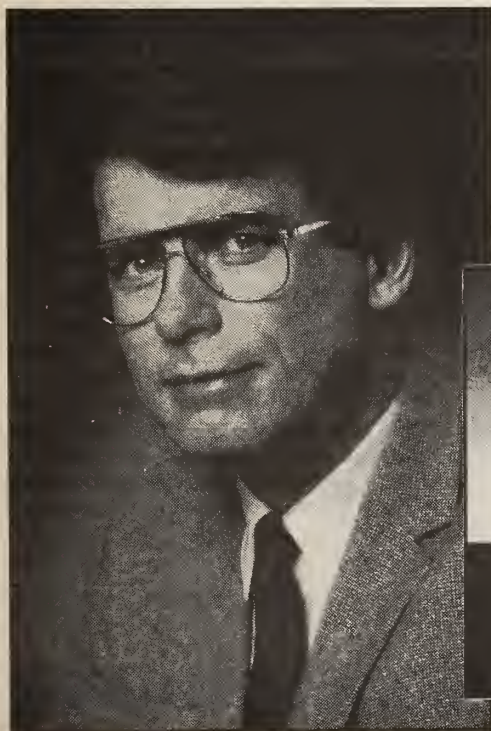
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IMPERIAL
OPTICAL
CANADA

UTFA policy on harassment workable and fair

by Suzie Scott

In January of 1986 the faculty association council voted *unanimously* for the adoption of a yet-to-be drafted sexual harassment policy. From that time to this, the association has put the adoption of a sexual harassment policy at the forefront of its priorities.

Countless meetings have been held within the association to discuss the issue. The grievance committee held at least three meetings at which nothing else was discussed. The executive committee and the grievance committee held a joint meeting to discuss the policy. The executive committee has discussed the progress of the drafting of the policy at almost every meeting since the beginning of the calendar year. Professor Henry Rogers, our grievance vice-president, and I have spent endless hours discussing and refining the draft policy. We attended several meetings at Simcoe Hall with all constituent groups to see where problems lay. As well, the association had private meetings with UTSA, SAC, APUS and GSU as well as many telephone conversations to explain our conclusions.

Many, many changes, both major and minor, were made as a result of the ideas brought forward by those groups. Vice-Provost David Cook and I spent hours and hours meeting together and talking by phone in an effort to make the policy clear and concise. As the only lawyer directly involved in the drafting of the policy, it almost always fell to me to take ideas and turn them into appropriately-worded clauses in the draft policy. I personally spent many nights and weekends re-working not only the language of the policy to conform with suggestions, but also in re-ordering the various sections into a readable whole. No other group on campus has put as much "blood, sweat and tears" into making a workable sexual harassment policy as has the association.

And our reward for all this effort? We are now vilified in the student press for "stalling" (in fact, I stayed up until all hours putting together a final draft so that we could take it to our council in June — at the request of the administration).



STEVE BEHAL

It is also widely alleged that the association has voted to adopt a policy that protects our members to the hilt, and that has little or no regard for those it is designed to protect. Nothing could be further from the truth. As evidenced by the original unanimous vote by our council to work for the adoption of such a policy and our all-out effort to this end thereafter, the association clearly desires a policy that works to end sexual harassment at this university.

There were two major areas of disagreement between the association and some other groups. One has been resolved, one has not. The resolved issue had to do with the definition of verbal harassment. The association wanted the words "repeated or extreme" to be included. Student groups protested, mainly on the ground that it made the definition too unclear — what

did "extreme" mean? The association, not without some reservations, decided that the students had a point and deleted "repeated or extreme" from the definition of verbal harassment.

The only difference of opinion now outstanding concerns time limits for making complaints. The student groups feel that a student ought to be allowed to make a complaint against an instructor within three weeks or so after course marks have been assigned. At first blush, that seems reasonable — who wants to take a chance on revenge expressed in a grade? On the other side of the coin, however, sits the accused. If the alleged offence takes place in September, the time limits desired by the student groups would mean that the accused wouldn't know that his/her behaviour was in question until nearly eight months later! Two serious problems arise in this scenario.

Firstly, the accused (who is and must be presumed innocent until proven guilty) would have little chance of remembering the alleged incident with any precision; nor would the accused be able to recall who might have been witness to the event. The bottom-line penalty in the policy for faculty members is a recommendation for dismissal. Given such an onerous penalty (and one with which we agree), surely the accused must be apprised of the allegation within a short time period for a proper defence to be mounted.

Secondly, the primary aim of the policy is to educate and, concomitantly, to change behaviour. The best way to accomplish that is to call the misbehaviour to the accused's attention immediately. Further, if a complaint lies fallow for as long as eight months, the misbehaviour may be repeated again and again. The effect of that would be that many more people would be harassed and that the accused would have a string of complaints made all at once. The hearing board might well be moved to impose the most serious sanction where behaviour is repeated time and again — behaviour that might well have never happened again if the first complaint had been made in a timely fashion.

The association wrestled with the

problem of protecting both complainants and accused persons for some time. In the policy adopted by the association's council, complaints must be made within two months of the alleged incident. In exceptional circumstances, the complaint may be delayed for up to six months. The fact that the complainant is a student of the accused is *not* an exceptional circumstance, however. The problem of possible retribution being expressed in a grade is overcome by a provision for a student's work and exams to be graded by a disinterested party. The association believes that these provisions balance the rights of both the complainant and the accused.

Some discussions I have had lead me to believe that there is some general misconception about when the time limit starts. What if, I have been asked, a staff member or a student rebuffs the unsolicited sexual advances of a boss or a faculty member and then, months later, gets no merit pay or a bad grade? If the staff member or student didn't complain at the time, there's nothing to be done, right? Wrong. There are four definitions of sexual harassment; among them is "a situation where submission to or rejection of an unsolicited sexual advance or solicitation is used as a basis for employment, academic or other decisions affecting the person or the person's progress." In the example above, a person could complain within two months of the incident and/or within two months from the time the past incident is used as a basis for a decision affecting employment or academic progress.

The faculty association has worked long and hard to ensure that all members of the University community — including our own — are made aware that sexual harassment will not be tolerated and will not go unpunished. The policy adopted by the association is a fair one. We urge the administration to move expeditiously to adopt and implement the policy.

Suzie Scott is executive director of the University of Toronto Faculty Association.



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LETTERS

Canadian universities must be free to hire the best

The University of Toronto community justly rejoices in the great honour bestowed on our colleague John Polanyi, but in doing so we have surely overlooked one of the most significant lessons to be learned from this auspicious event.

If the current immigration rules had been enforced 25 years ago, it is most unlikely that Professor Polanyi would have been eligible to apply for a tenured faculty position at our university. He

would have lacked the requisite qualifications of Canadian citizenship or landed immigrant status. One can only speculate about the number of other brilliant researchers whose services we have denied ourselves since the University first yielded to the federal government's immigration rules for foreign academics five or more years ago.

I felt at the time, and still feel, that the government's position was self-defeating and that the universities

should have fought it vigorously. If the search for excellence is more than a catchword, then Canadian universities must be free to hire the best available talents regardless of nationality. If we can find the best in our midst so much the better, but if we have to augment their number from outside the country to maintain the highest standards then it is surely a price well worth the paying.

Taking my own discipline of law as an example, it is easy to show how immensely Canada benefited in the 60s and 70s from the influx of legal academics from Australia, New Zealand and, to a lesser extent, the US. I am sure the same can be said for most other disciplines in many Canadian universities. The reverse of course also applies to institutions of higher learning in other Commonwealth countries and in the US. They too have been greatly enriched through their ability to hire foreign academics. Indeed, universities seem to me the last place where narrow nationalist objectives should be pursued, whether with respect to hiring policies or anything else.

I am not so naive as to suggest that Canada should pursue an open-door policy regardless of the attitude of other countries. Obviously we should strive for reciprocity, and we should do it with at least the same degree of concern and commitment that we show for the establishment and maintenance of international free trade in goods and services. One of the sad aspects of the current immigration policies is that it has been imposed so indiscriminately and unreflectively on Canadian universities that the feasibility of developing a program of international mobility among academics seems scarcely to have been pursued at all.

Jacob S. Ziegel
Faculty of Law



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Administration should disclose salary surveys

It is about time that the administration recognizes the important role of the non-academic personnel. We are here to make sure that the whole place runs smoothly. You can no more have a university without non-academics than you can without books, laboratory equipment, faculty or students.

For the past five years, the administration has spared no effort to implement tougher policies to regulate every aspect of the life of the non-academic staff: from a Kafkaesque performance appraisal ritual to the creation of a large number of part-time positions with sufficient duties for the incumbents to work 50 hours a week. Now the administration's latest discovery, reported in the *Bulletin* (Nov. 24), is that we do not need salary increases because we are overpaid.

We have always been told that the midpoint of the job classification scheme represents the market value of the position. It is even written in the manual of staff policies: code 4 02 14, pages 5 and 6. Now Mr. Janzen admits that in fact the midpoints are lower than market value. Even so, he cites unspecified "administration surveys", without explaining their source, to prove that the University is a generous employer. This is a peculiar kind of funding in an institution which prides itself on the excel-

lence of its research. Will Mr. Janzen disclose his data so that it can be tested by others?

It is frankly insulting to the non-academics for Mr. Janzen to suggest that if their pay is bad, they would simply leave for greener pastures elsewhere. Somehow it must be made clear to the mandarins of the "Personnel Department" or "Human Resources Whatever" that we are not factory workers who go from one place to another when the pay is low. This is our institution as well as Mr. Janzen's.

The majority of non-academic staff are dedicated people who serve the most demanding of individuals around, who have not hesitated to take over the increased workloads produced by the termination of many of their co-workers, but who still believe that the University is a worthwhile place to work for and that there is hope for better working conditions. The fact that we are the only powerless group on campus does not mean that we are slaves. Even the most loyal and dedicated secretary has to eat, and if the administration continues on its present route we will be left with no other choice but to unionize.

Margarita Orszag
Business Officer
Department of History

Few library workers within reported classifications

In response to the article concerning the settlement of the contract between the University of Toronto and CUPE 1230, representing the U of T library workers (Nov. 24), I find that the statement of the salary levels of certain classifications is misleading. While these classifications do exist in the contract, in reality very few of the library workers are within these classifications. For a number of years there have not been any bookbinders at all within the bargaining unit, although there is one rare bookbinder at a somewhat higher salary level. The bargaining unit also does not contain any library technician VI. However, it does contain 26 bibliographic associates at the same salary level. This represents eight percent of the full-time membership. The majority of the full-time library employees, representing 40 percent of the membership, are classified as library technician III and will make a maximum of \$20,360 beginning July 1, 1987. The

next largest group of employees, representing 30 percent of the membership, is classified as library technician IV and will make a maximum of \$22,501 beginning July 1, 1987. Therefore, a full 70 percent of the membership will be making \$22,501 or less.

Certainly the figures that were quoted are attractive and accurate. Unfortunately they do not portray the actual situation as it exists at the library. To quote such figures would lead members of the University community and others to believe that library workers are quite well off. While I feel that the settlement was quite fair considering the current economic climate, I do not feel that the implications of the recent settlement as regards salaries was fairly reported.

Andrea Lennox
Chief Union Steward and member of the
full-time bargaining committee
CUPE 1230

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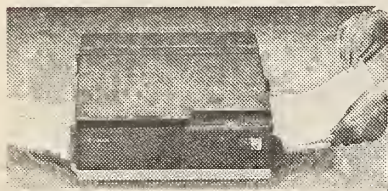
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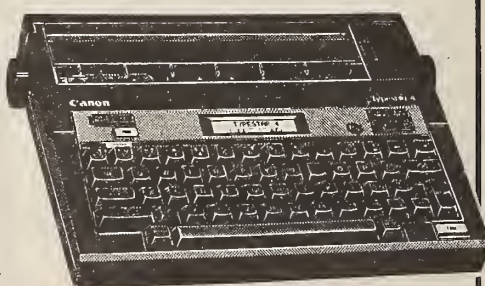
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One bedroom furnished apartment required for one month March 1 — March 31, 1987 for visiting professor and wife from Princeton. Preferred location: close to University. Please call Canadian Institute for Theoretical Astrophysics at 978-6879 during office hours.

Professional wants to rent (or house-sit) minimum 3-bedroom house w/appliances, not necessary fully furnished, preferably w/fenced garden. If needed, will keep pets. Call Phillip at IRIS: 368-3555 (leave message).

Furnished rental house, convenient to U of T, required by professional couple (non-smokers) on sabbatical. No children. Start Sept. '87. Ph. (403) 437-3491 or 432-5471 or write 10516 — 17 Ave., Edmonton T6J 5B5.

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University of Toronto Press employees Kathryn Bennett, Maggie Reeves and Eva Torok recently attended the 1986 Banff Publishing Workshop. The Press gratefully acknowledges the support of the Government of Ontario through the Ministry of Citizenship and Culture and the Hon. Lily Munro, Minister.

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